

FINAL STATUS SURVEY PLAN

Remediation of Operable Units 1 and 2 – Former Harshaw Chemical Company Site, Cleveland, Ohio

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ACRONYMS

ANSI	American National Standards Institute
ARAR	Applicable or Relevant and Appropriate Requirement
bgs	below ground surface
CFR	Code of Federal Regulations
cpm	counts per minute
DQO	Data Quality Objective
EFS	Enviro-Fix Solutions, LLC
EM	Engineer Manual
EPA	U.S. Environmental Protection Agency
FSS	Final Status Survey
FSSP	Final Status Survey Plan
FUSRAP	Formerly Utilized Sites Remedial Action Program
g	gram
GPS	Global Positioning System
HCCS	Harshaw Chemical Company Site
in.	inch
kg	kilogram
m	meter
m ²	square meter
μR	micro-Roentgen
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCA	Multichannel Analyzer
MDC	Minimum Detectable Concentration
NaI	Sodium Iodide
NAD	North American Datum
NAVD	North American Vertical Datum
No.	Number
NRC	U.S. Nuclear Regulatory Commission
NUREG	Nuclear Regulatory Commission Regulation
OH	Ohio
OU	Operable Unit
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity
pCi	picoCurie
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
Ra	Radium
RAO	Remedial Action Objective
RG	Remedial Goal
ROC	Radionuclide of Concern
ROD	Record of Decision
RSO	Radiation Safety Officer



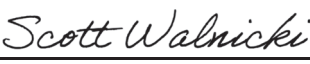
s	second
SAP	Sampling and Analysis Plan
SATOC	Single Award Task Order Contract
SOP	Standard Operating Procedure
SOR	Sum of Ratios
SU	Survey Unit
Th	Thorium
TPP	Technical Project Planning
U	Uranium
USACE	U.S. Army Corps of Engineers



SIGNATURES

This Final Status Survey Plan (FSSP) has been prepared by Enviro-Fix Solutions, LLC (EFS) to provide a consistent approach for collecting data of sufficient quality and quantity to support evaluations and release decisions of land areas for the former Harshaw Chemical Company Site Remediation of Operable Unit 1 and Operable Unit 2, Cleveland, Ohio (OH) Project. Work conducted under this contract will be performed in accordance with applicable federal, state, and local safety and occupational health laws and regulations including Occupational Safety and Health Administration (OSHA) standards, including 29 Code of Federal Regulations (CFR) 1910 and 1926, and the United States Army Corps of Engineers (USACE) Safety and Health Requirements Manual (EM 385-1-1, 15 November 2014). The contents of the FSSP are subject to review and revision as new information becomes available.


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1.0 INTRODUCTION

Enviro-Fix Solutions, LLC (EFS) has been selected by the United States Army Corps of Engineers (USACE) Buffalo District under Contract Number W912P424C0002, to conduct remedial activities at the former Harshaw Chemical Company Site (HCCS) located in Cleveland, Ohio (OH). The HCCS remediation is being completed under USACE's Formerly Utilized Sites Remedial Action Program (FUSRAP), which was established to identify, investigate, and clean up or control sites previously used during the U.S.'s early atomic energy and weapons programs. The HCCS has been identified as containing various concentrations of residual radioactive material from previous operations and the *Record of Decision for Operable Unit (OU)-1 and OU-2 Former Harshaw Chemical Corporation Site* (ROD) (USACE 2021) identifies two Operable Units (OUs), identified as OU-1 and OU-2, for remediation. Planned remedial activities for both OUs include removal and off-site disposal of FUSRAP-related radiologically contaminated soil and debris (pavement and foundations). This final status survey plan (FSSP) provides the means and methods for demonstrating land areas satisfy the applicable Derived Concentration Guideline Levels (DCGLs) for radioactive constituents.

Radionuclides of concern (ROCs) identified for the Site include radium (Ra)-226, thorium (Th)-230, Th-232, and uranium (U)-238. The September 2021 ROD for the HCCS promulgates the DCGLs for the ROCs for each OU.

The selected remedies identified in the ROD for both OUs is excavation of contaminated wastes and soils exceeding the OU-specific DCGLs and offsite disposal at an appropriate licensed and/or permitted disposal facility. Upon completion of remedial actions, a final status survey (FSS) will be performed to identify and quantify residual ROCs to verify that DCGLs are satisfied. The guidance found in the following sources — Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) [U.S. Environmental Protection Agency (EPA) 2000], USACE's technical project planning (TPP) process [Engineer Manual (EM) 200 1 2] (USACE 2016), the data quality objective (DQO) process (EPA 2006), as well as requirements promulgated within the USACE HCCS Scope of Work, and Special Project Procedures will be used to demonstrate compliance with the Record of Decision (ROD).



1.1 Site Description and Areas of Concern

The HCCS is located at 1000 Harvard Avenue, in Cleveland, Ohio, 4.8 kilometers (3.0 miles) south of downtown Cleveland (**Figure 1-1**). It is a 22-hectare (55-acre) property located in an industrialized area (i.e., Cleveland's industrial valley) that is bordered by the Cuyahoga River and Big Creek. The Harshaw Site is surrounded by other industrial operations and residential areas.

The HCCS is separated into two operable units, OU-1 and OU-2, and an investigative area (IA), IA-06 (**Figure 1-1**). Operable Unit-1 is located north of Big Creek and west of the Cuyahoga River. The buildings have been removed from OU-1. It currently contains a property developed for truck and equipment servicing on the southern portion of the site. The remainder of the site consists of undeveloped industrial properties, open fields, and wooded areas. Operable Unit-2 is south of Big Creek and west of the Cuyahoga River and consists mainly of undeveloped industrial properties and open fields. A municipality-owned property and a trucking company are in the northwest portion of OU-2. The southern end of OU-2 contains a closed solid waste landfill. Investigative Area-06 is an undeveloped parcel located east of the Cuyahoga River which was addressed under a separate record of decision and is beyond the scope of this FSSP.

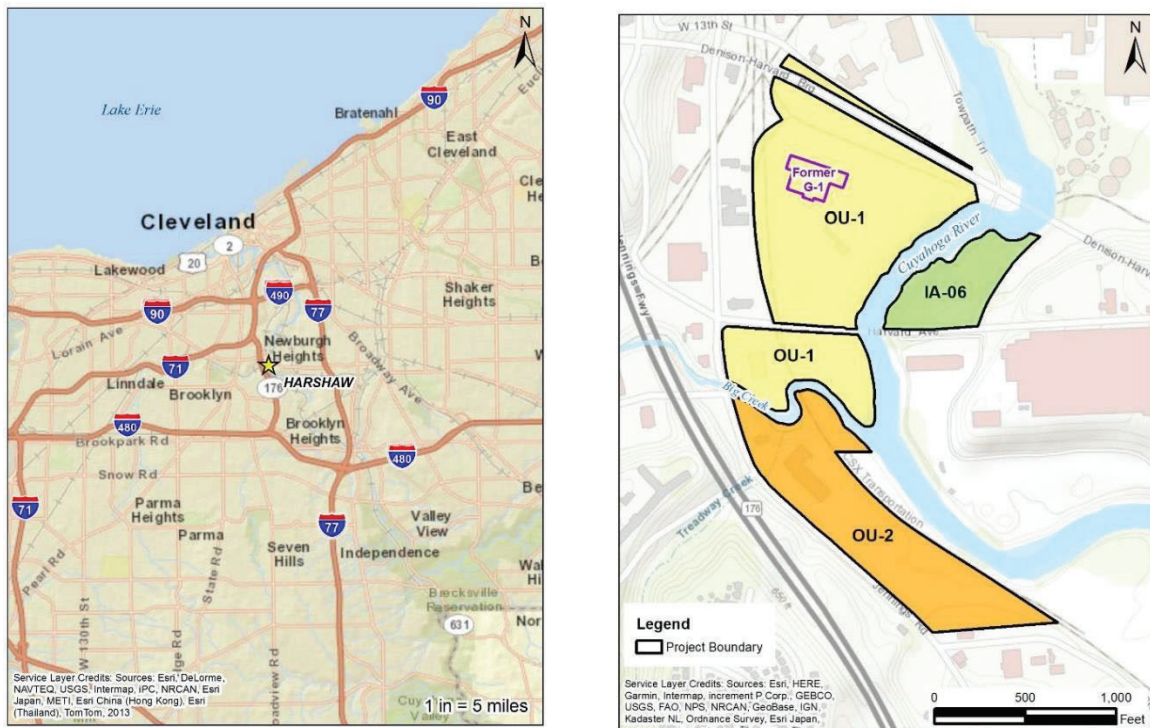


Figure 1-1: HCCS Location and Operable Units



2.0 REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) for HCCS represent specific goals that the remedial action must satisfy to be protective of human health and the environment, as well as to be compliant with identified applicable or relevant and appropriate requirements (ARARs). The single ARAR for the HCCS is identified as Chapter 10, Code of Federal Regulations, Part 20 (10CFR20), Subpart E, which yields the following RAO:

- Ensuring overall protectiveness and that the critical receptor does not receive a dose more than 25 mrem/yr TEDE above background from FUSRAP-related contamination.

In order to meet the RAO, USACE has developed DCGLs, which are the quantitative cleanup levels that need to be achieved to ensure satisfaction of the RAO. The HCCS DCGLs are presented in **Section 2.1** and are unique to each OU based on the anticipated future land use of each OU which result in different critical receptors. The DCGLs for OU-1 are based on a construction worker critical group, while the DCGLs for OU-2 are based on a resident adult critical group.

2.1 Derived Concentration Guideline Levels

Cleanup criteria, consisting of DCGLs for ROCs at the site, have been established in the ROD as summarized in **Table 2-1**. Per the ROD, the four ROCs are identified as Ra-226, Th-230, Th-232, and U-238 (which is used as a surrogate for total uranium). The DCGLs for ROCs refer to the allowable increment above background radioactivity levels (refer to Section 2.2). Refer to the ROD for additional details related to the development of these DCGLs.

Table 2-1. DCGLs for OU-1 and OU-2

Radionuclide	Units	OU-1 DCGLs ^{1,2}	OU-2 DCGLs ^{1,2}
Ra-226 ^a	pCi/g	9.1	3.6
Th-230	pCi/g	35	16
Th-232 ^b	pCi/g	6	3.6
U-238 ^c	pCi/g	190	150

Notes:

1. Since contaminants include a mixture of four ROCs, a sum-of-ratios approach must be used to ensure the dose-based RAO is achieved.
 2. The individual nuclide DCGLs represent the allowable increment above background that meets the dose-based RAO.
 - a. DCGLs for Ra-226 include Pb-210 contributions to dose
 - b. DCGLs for Th-232 include Ra-228 and Th-228 contributions to dose
 - c. DCGLs for U-238 is being used as a surrogate for total uranium and accounts for dose contributions from U-234 and U-235.
- pCi/g denotes picoCuries per gram; OU denotes Operable Unit; DCGL denotes Derived Concentration Guideline Level*



2.2 Background Radioactivity Levels

The background dataset to be applied during remediation and FSS will consist of using the background data generated during the Remedial Investigation of the site, which will serve as the Background Reference Area in accordance with MARSSIM.

Prior to applying the background reference area data for FSS purposes, a background reference area report will be prepared and submitted to USACE for approval. The background reference area report will document the collected data and establish values for ROCs to be applied during FSS for the purposes of background subtraction and statistical testing.



3.0 FINAL STATUS SURVEY DESIGN

This section establishes the design of the FSS to be implemented on the HCCS. Subsequent sections detail the means and methods for implementing the FSS design (Section 4.0), data evaluation (Section 5.0), Quality Control and Quality Assurance components of the design implementation (Section 6.0), and reporting requirements (Section 7.0).

3.1 Data Quality Objectives

Data quality objectives (DQOs) are qualitative and quantitative statements that establish a systematic procedure for defining the criteria by which data collection and evaluation is designed to ensure the data is of the appropriate quality and quantity to demonstrate that RAOs are achieved, and that the data can be used to make confident decisions relative to future site use and occupancy (i.e., does the site satisfy the ROD-stipulated release criteria). The DQOs for the FSS of the site include:

- Clarifying the project problem,
- Defining the data necessary for achieving the end use decisions,
- Determining the appropriate method of data collection, and
- Specifying the level of decision errors acceptable for establishing the quantity and quality of data needed to support project decisions.

The overall quality assurance (QA) objective for the FSS is to develop and implement a survey design for obtaining and evaluating data that meet the DQOs to evaluate whether the DCGLs, as summarized in **Table 2-1**, have been achieved. Specifically, ROC data will be generated to demonstrate that the site contains residual levels of contaminants which are less than the DCGLs and otherwise satisfy the RAO established for the site. QA practices are also established as part of the design to ensure field measurements, sampling methods, and analytical data provide information that is comparable and representative of actual field conditions, and that the data generated are technically defensible.

To establish the project DQOs, a series of planning steps are used – as specified in the EPA Guidance for Data Quality Objective Process QA/G-4 – to identify the data needed to support project decisions and to develop a data collection program. The process is intended to be iterative, optimizing data collection to meet the applicable decision criteria. The planning steps and project-specific designs resulting from these steps are presented in the following sections. On the whole,

the DQO process is conducted within the framework of satisfying MARSSIM recommendations and the site-specific RAO requirements.

3.1.1 State the Problem

Portions of the site currently contain FUSRAP ROCs at levels which exceed those considered protective of human health and the environment. These portions of the site will be remediated using the ROD-selected alternative of excavation and offsite disposal (ROD Alternative 3 for OU-1, and ROD Alternative 7 for OU-2). Following excavation, FSS data will be collected to demonstrate that RAOs have been achieved. Satisfaction of the RAOs will be determined by comparing the collected FSS data against the established DCGLs. Additionally, unexcavated portions of the site must also be evaluated to ensure that they are compliant with RAOs and do not contain ROCs in excess of the DCGLs.

The problem may be stated simply as “How to design a data collection and evaluation program that will yield data of sufficient quality and quantity to adequately quantify residual ROC concentrations in order to make confident decisions related to releasing the site.”

3.1.2 Identify the Decision

The decision will ultimately reduce to a comparison of collected FSS data against the established DCGLs for the site, and the decision may be stated as a question which asks: “Does the data demonstrate with sufficient confidence that the true residual concentrations of ROCs are less than, or greater than, the DCGLs?” If the data demonstrates the RAOs are achieved, the data may be used to support release decisions for the site. If the data indicates that RAOs are not achieved, or that confidence is inadequate, then additional remediation and/or data collection, and/or data evaluation may be necessary.

3.1.3 Identify Inputs to the Decision

Inputs to the decision will include any and all data collected on the site that are considered representative of the final status of the site. Inputs may include, but are not limited to, the following:

1. Historical data, such as RI data, which will be used to establish initial MARSSIM classifications for land areas across the site. For unexcavated areas confirmed to satisfy DCGLs, historical samples may be considered representative of final status and used to augment the data collected as part of this FSSP.

2. In situ data collected during gamma walkover surveys of the site along with any static measurements collected during implementation of this FSSP. These data are likely to consist of dose rate measurements, gross gamma data, and gamma spectroscopy measurements using field instrumentation.
3. Offsite analytical laboratory results for ROCs of collected samples.

3.1.4 Define the Study Boundaries

Study boundaries relate to the data populations used to determine whether DCGLs are satisfied. Two main categories of data population include the background radioactivity data population and the FSS data population.

Temporal boundaries for the data populations begin with the historical RI data, which are used to establish initial MARSSIM land area classifications, estimate vertical extents of ROC impacts, and background reference area data. The timeframe of the study extends through all data collected as part of this FSSP until the DCGLs for each OU have been satisfied and the OU is released for its intended future use.

Spatial boundaries include all areas within the HCCS fence line, including the background reference area. Within the horizontal extents of the study area, the vertical boundary includes all soils/materials extending from the surface of the site (including building foundations) to the depth required to determine DCGLs have been satisfied. The vertical extents will be confirmed for each area via sample collection and analysis to verify that the non-impacted interface has been reached.

3.1.5 Constraints on Data Collection

Appropriate constraints will be placed on data collection to ensure high quality data are collected. In general, data will be collected, analyzed, and evaluated using currently accepted best practices and in accordance with applicable guidance documents, regulations, ARARs, and standard operating procedures (SOPs). Details on specific data constraints to be implemented are provided in Sections 4.0 through 6.0 and address all components of performing field surveys and measurements as well as sample collection and analysis.

3.1.6 Develop Decision Rules

The decision will ultimately reduce to a comparison of collected FSS data against the established DCGLs for each OU. In order to evaluate data on the site, the site will be divided into survey units (SUs). The decisions are made at the SU level and determine whether each individual SU satisfies



the DCGLs, or requires further action.

Considering that FUSRAP ROCs exist in a mixture on the site, an evaluation tool known as the “sum-of-ratios” (SOR) will be used to determine if the RAO has been achieved within each SU. The SOR evaluation accounts for the contributions from each nuclide relative to its DCGL and background and takes the forms of Equation 1 (OU-1 DCGLs) and Equation 2 (OU-2 DCGLs):

$$SOR_{OU-1} = \frac{^{226}\text{Ra}-BKG}{9.1 \text{ pCi/g}} + \frac{^{230}\text{Th}-BKG}{35 \text{ pCi/g}} + \frac{^{232}\text{Th}-BKG}{6 \text{ pCi/g}} + \frac{^{238}\text{U}-BKG}{190 \text{ pCi/g}} \quad (\text{Equation 1})$$

$$SOR_{OU-2} = \frac{^{226}\text{Ra}-BKG}{3.6 \text{ pCi/g}} + \frac{^{230}\text{Th}-BKG}{16 \text{ pCi/g}} + \frac{^{232}\text{Th}-BKG}{3.6 \text{ pCi/g}} + \frac{^{238}\text{U}-BKG}{150 \text{ pCi/g}} \quad (\text{Equation 2})$$

In the event that any FSS result exceeds the RAO (i.e., if $SOR > 1.0$), then additional evaluations will need to be performed to determine the SU status as follows:

- The Wilcoxon Rank Sum (WRS) Test
- The Elevated Measurement Comparison (EMC) Test

3.1.7 Define Acceptable Limits on Decision Errors

In the event that all sample results have SOR results less than 1.0, the conclusion is straightforward. The SU passes the evaluation, and the RAO is satisfied. However, if even a single sample SOR result exceeds unity, the entire SU requires further evaluation to determine whether the RAO is achieved. In accordance with MARSSIM, this evaluation takes place through the WRS test which is non-parametric two-sample statistical test that compares SU results to background results to determine if the overall SU satisfies the ROA. The WRS test is predicated on formulating a Null Hypothesis, which is presumed to be the true state of the SU relative to the RAO, and an Alternative Hypothesis, which is an expression of what must be the true state of the SU if the Null Hypothesis is proven untrue. Setting up these hypotheses as such, puts the onus of proof on the collected data to reject the Null Hypothesis in order to conclude that a SU satisfies the RAO.

A critical component of the WRS is the selection of acceptable limits on decision errors. The selection of decision error rates will dictate the FSS design to ensure that data of sufficient quantity and quality are collected to demonstrate within the prescribed level of confidence that the result from the WRS test agrees with the true state of the SU. This ensures that a correct decision will be made relative to the cleanup criteria. There are two types of decision errors that may occur in a



hypothesis testing. They are known as Type I (False Positive) and Type II (False Negative). A Type I error translates to rejecting the Null Hypothesis when it is actually true (i.e., incorrectly releasing a SU which may result in unacceptable risk to future occupants). A Type II error translates to accepting the Null Hypothesis when it is actually false (i.e., incorrectly failing a SU which could result in additional and unwarranted impacts to remedial cost and schedule). The Type I error rate (denoted by “ α ”, alpha) for the HCCS has been selected to be 0.05, which translates to a 95% confidence that the correct decision is being made relative to releasing a SU. The Type II error rate (denoted by “ β ”, beta) for the HCCS has been selected to be 0.05, which translates to a 95% confidence that the correct decision is being made relative to failing a SU. **Table 3-1** summarizes the potential outcomes of the WRS hypothesis testing and illustrates the impact of the selected Type I and Type II error rates.

Table 3-1: WRS Test Hypothesis Conclusions and Error Rates

Scenario	True Condition of Survey Unit	
	SU Actually Does Not Meet Release Criterion	SU Actually Meets Release Criterion
Decide SU Does Not Meet Release Criterion	Survey unit fails Correct Decision (Probability = $1-\beta$, 0.95)	Survey unit fails Incorrect Decision/Type II Error (Probability = β , 0.05)
Decide SU Meets Release Criterion	Survey unit passes Incorrect Decision/Type I error (Probability = α , 0.05)	Survey unit passes Correct Decision (Probability = $1-\alpha$, 0.95)

3.1.8 Optimize the Design

The collected data and the variability of data will have an effect on the sampling design. Limitations to the design may not be readily apparent prior to actual implementation of the design. Therefore, the FSS design will continually be evaluated and, if necessary, changes may be made to the design in a Bayesian manner (assessing probability in order to incorporate new information with the most accuracy) to optimize the design and to ensure that data collection efforts meet the intended DQOs. Changes may occur concurrently for several steps within the DQO process. The design options, such as sample collection design, sample size, and analytical procedures, will be evaluated based on the ability to meet the DQOs. Any changes to the design will be subject to USACE approval.



3.2 Land Area Classifications

Congruent with the MARSSIM approach for evaluating land areas by subdividing the land area into SUs, RI data was used to assign preliminary classifications to all land areas within OU-1 and OU-2 at the HCCS. The preliminary classification dictates the FSS design details to be applied for SUs within each classification. The MARSSIM guidance provides recommended SU sizes, sampling frequency, and scan coverages among other considerations for each classification. To this end, the site is broken down by land area classification as summarized below.

- Class 1 Areas: Class 1 areas are impacted areas with a confirmed presence of, or a high potential to contain, ROCs in excess of the established DCGLs. For HCCS, Class 1 areas will correspond to areas which contain above-criteria concentrations of ROCs and will require excavation in order to satisfy the RAO.
- Class 2 Areas: Class 2 areas are impacted areas which do not have a confirmed presence of ROCs above the DCGL criteria, but which have a higher potential to be impacted with ROCs above the DCGL criteria, largely due to their proximity to confirmed contamination or other features which may suggest potential contamination. For the HCCS, Class 2 areas will mainly consist of buffer areas around Class 1 excavations.
- Class 3 Areas: Class 3 areas are impacted areas that are not expected to contain ROCs in excess of the DCGLs but are considered impacted due to their proximity to Class 2 areas and historical site operations. For the HCCS, Class 3 areas will encompass areas within OU-1 and OU-2 that are not classified as Class 1 or 2 areas. For design purposes, and based on Remedial Investigation data, some areas within OU-1 and OU-2 are believed to be non-impacted and area excluded from MARSSIM classification (notably, the northern portion of OU-2).

The remedial investigation data have been used to identify areas of the site requiring excavation to meet DCGLs and all excavation areas are considered Class 1 areas. Class 2 areas will be designed around final Class 1 excavation limits. The preliminary classifications of land areas are subject to change if additional data collected during remediation or during FSS indicate that an area may have been misclassified, particularly if above-criteria material is discovered within a Class 2 or a Class 3 area. The discovery of above-criteria (i.e., above the DCGL SOR) material in a Class 2 or Class 3 area may prompt localized classification upgrades of the land area to a Class 1 area requiring excavation, which will then be appropriately buffered by a Class 2 area. Downgrading an area classification is not expected to occur on the site since the initial area classifications are based on actual data collected during the remedial investigation of the site.



3.3 Reference Coordinate Systems

To facilitate both survey measurements and data analysis, a survey reference coordinate system will be utilized for all applicable aspects of the FSS program, such as SU boundaries, sample locations, and gamma scan measurements. All coordinates will be referenced to the state plane coordinate system:

- Horizontal – Ohio State Plane Coordinate System, North Zone (NAD 83)
- Vertical – North American Vertical Datum of 1988 (NAVD 88)

Note that land surveyors will be used to document depths of excavations using the NAVD 88 system, but excavation sidewall samples and measurements will typically be documented using a depth below ground surface (bgs) system to document vertical data relative to the ground surface.

3.4 Survey Unit Designs

SUs will be designed according to MARSSIM-based classification scheme, resulting in Class 1, Class 2, and Class 3 SUs being designed and implemented on the site. SU design addresses several key parameters which are being established based on applicable MARSSIM guidance as described in the following sections.

3.4.1 SU Layout Design

The layout design for SUs in the field will depend on the area classifications, with unique designs being implemented for Class 1, Class 2, and Class 3 SUs.

- **Class 1 Units:** Class 1 units will comprise all remedial excavations on the site. In accordance with MARSSIM, Class 1 Units will be limited to 2,000 m² in size for the purposes of determining sampling density requirements to achieve sufficient power for the statistical tests. Slight (<10%) increases in size beyond 2,000 m² may be warranted for practical reasons and this is acceptable so long as the sampling frequency is based on 2,000 m² and the established sampling grid is extended to include the excess area. Sidewalls will count as surface area to be included in the size of a SU. For small excavations the inclusion of sidewalls with floor area is the preferred approach. The total surface area of the sidewalls and floor area will be limited to 2,000 m². For larger excavations, it may be advantageous to treat the sidewalls and floor as separate SUs.
- **Class 2 Units:** In accordance with MARSSIM guidance, Class 2 SUs will be implemented as buffer areas around all Class 1 excavations and will be limited to 10,000 m² in size. At a minimum, Class 2 areas will extend a minimum of 10 meters (m) from the edge(s) of a Class 1 excavation and will completely surround all excavated areas.
- **Class 3 Units:** In accordance with MARSSIM guidance, there is no size limit to a Class 3 area. Class 3 areas will be designed to address all areas beyond Class 1 and Class 2 SUs



and will include the balance of the OUs. For practical considerations, the Class 3 area of each OU may be subdivided into multiple Class 3 units, but this is not required.

Error! Reference source not found. illustrates the design layout of remedial (Class 1) areas and the surrounding Class 2 and Class 3 areas. This figure provides a general layout of anticipated land area classifications based on the remedial investigation data and is provided as an example only; specific SU designs and layouts within these general areas will be established in the field and each SU will conform to design requirements.

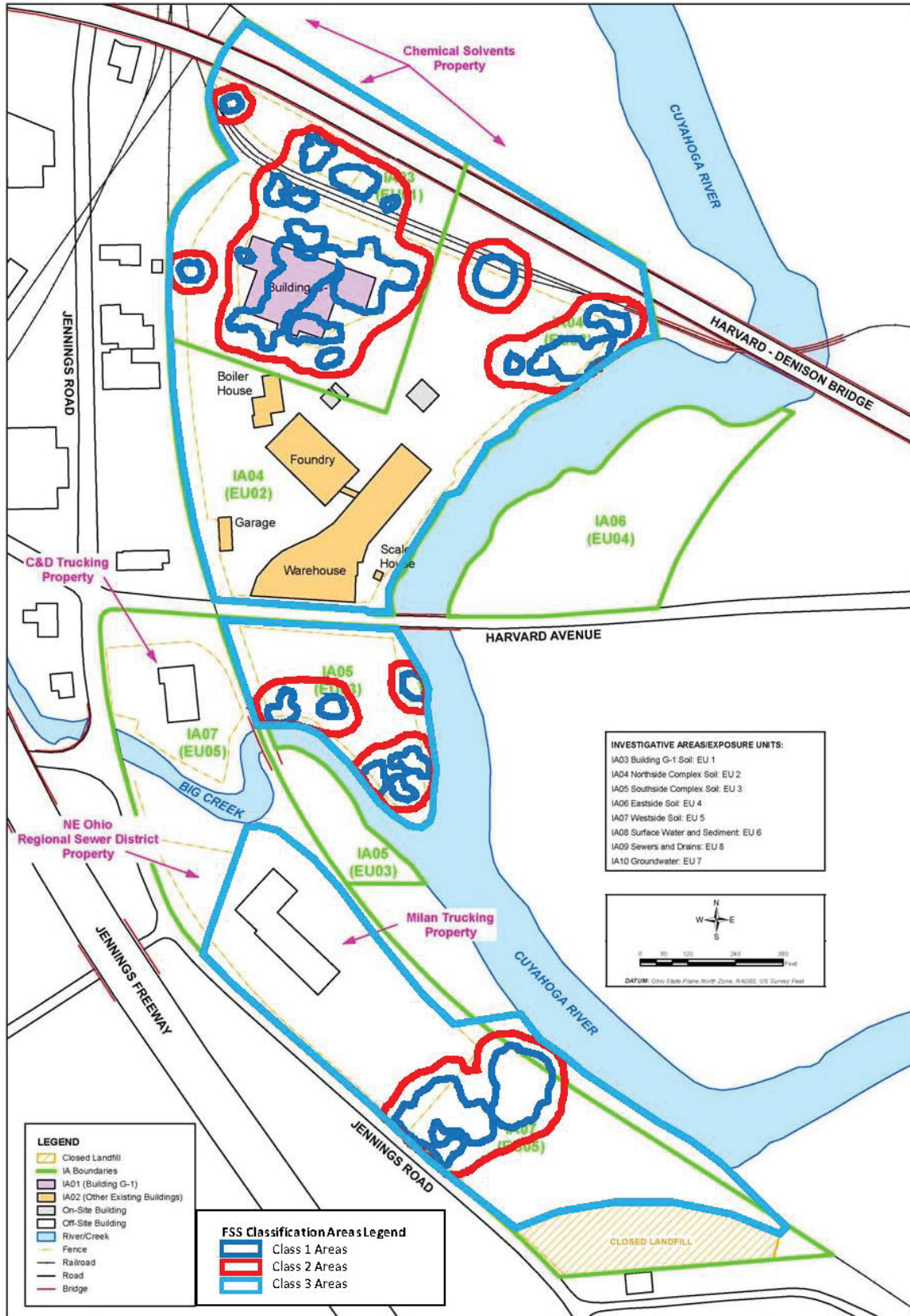


Figure 3-1: Example Layout of MARSSIM Classification Areas



3.4.2 SU In Situ Measurement Design

In situ measurements during FSS refers to performing radiation scanning surveys. For ROCs, in situ measurements will consist of scanning soil surfaces for gamma emissions, and while gross gamma measurements may be used to guide remedial excavations, isotopic differentiation via gamma spectrometry will be utilized for FSS purposes when feasible. The types and magnitude of in situ gamma scanning will depend on SU classification as described below.

- **Class 1 Units:** Gamma scanning in Class 1 units will require 100% coverage of accessible excavation floors and sidewalls. Scanning results will be georeferenced and plotted on survey maps.
- **Class 2 Units:** Gamma scanning in Class 2 units around ROC-contaminated Class 1 units will require surface scans over a minimum of 50% of Class 2 land areas with a goal of obtaining 100% coverage over all accessible areas. Scanning results will be georeferenced and plotted on survey maps.
- **Class 3 Units:** Gamma scanning in Class 3 units will be performed with a goal of obtaining 10-50% coverage over accessible areas. There is no minimum coverage requirement and areas will be selected for scanning based on judgement and biased towards areas with the highest potential for impacts such as traffic patterns, drainage features, and proximity to Class 2 areas.

3.4.3 SU Sampling Design

FSS sampling designs are dependent on the applicable classification of the SU being sampled and will include sampling any analysis for ROCs. All Class 1 and Class 2 FSS samples will be collected as discrete grab samples with sampling locations determined from establishing a triangular systematic grid built from a random starting location within each SU. Class 3 FSS samples will be collected as discrete grab samples from randomly selected locations within the SU boundary. The number of discrete sample locations within an SU (i.e., the spacing of the triangular sampling grid, or the number of random locations), is determined by the requirements of the WRS Test. MARSSIM provides a method to estimate the minimum number of systematic samples needed to ensure sufficient power is obtained from the WRS test to confidently make decisions regarding the residual radioactivity of an SU relative to the DCGLs.

In accordance with MARSSIM guidance, and MARSSIM Table 5.3, the inputs to the sampling frequency estimate include the expected variability of the data (σ), the lower bound of the gray region and its distance from the DCGL (Δ), and the acceptable error rates for Type I (α) and Type II (β) errors. For planning purposes, the lower bound of the gray region is set to 50% of the DCGL, which yields the expression " $\Delta = \text{DCGL} - (\text{DCGL}/2)$ ". The expected variability of the data is



estimated based on Remedial Investigation background data for radionuclides in soil which was used to calculate the standard deviation (σ) of the dataset for each ROC. The expression “ Δ/σ ” is referred to as the relative shift and can be used with the selected α and β DQOs to calculate the minimum number of samples required per SU as provided in MARSSIM Table 5.3. **Table 3-2** summarizes the relative shift values obtained for each ROC in each OU.

Table 3-2: Calculated Relative Shift Values

ROC	RI BKG σ	OU1 DCGL	OU1 LBGR	OU1 Relative Shift	OU2 DCGL	OU2 LBGR	OU2 Relative Shift
Ra-226 (pCi/g)	0.321	9.1	4.55	14	3.6	1.8	5
Th-230 (pCi/g)	0.326	35	17.5	53	16	8	24
Th-232 (pCi/g)	0.315	6	3	9	3.6	1.8	5
U-238 (pCi/g)	0.922	190	95	103	150	75	81

Notes:

1. RI BKG σ represents the standard deviation of all Remedial Investigation Background Data as reported in Table 6-11 of the Remedial Investigation Report.
2. Relative shift equals Δ/σ , where $\Delta = \text{DCGL} - \text{LBGR}$.

The relative shift has an inverse relationship with the minimum numbers of samples required for the WRS test such that the smaller the relative shift, the more samples are required. A relative shift of greater than or equal to 4 results in the least amount of samples recommended by MARSSIM. As shown in **Table 3-2**, the lowest relative shift is 5. However, MARSSIM recommends for planning purposes that a relative shift be set to a value between 1 and 3. Therefore, in accordance with MARSSIM and as supported by the results shown in **Table 3-2**, a relative shift value of 3 is being used to establishing minimum sampling requirements for all SU classes, and the systematic grid spacing for all Class 1 and Class 2 SUs at the HCCS.

Using MARSSIM Table 5.3, and a relative shift value of 3, and $\alpha = \beta = 0.05$ error rates, the minimum number systematic sample locations per each Class 1 and Class 2 SU within OU-1 and OU-2 is determined to be 10.

In addition to systematic sampling, biased samples may be collected to address potential small areas of radioactivity which the systematic sampling grid may have missed. The selection of biased sample locations, if necessary, will be based on the results of the in-situ gamma scan results. If gamma scan results indicate non-homogenous distributions of residual radioactivity and identify areas of relatively higher radiation, a biased sample may be selected from the higher radiation area to determine if DCGLs have been exceeded, and if the EMC test should be performed. If the results of the gamma scans do not identify any areas of potential concern, then the collection of a biased



sample is not required.

3.4.4 SU Design Summary

The FSS design summary is presented in **Table 3-3**. Implementation of the design, including specific sampling design considerations along with means and methods for FSS, are addressed in further in Section 4.0.

Table 3-3. FSS Design Summary

Parameter	Design
Class 1 Survey Unit Design Parameters	
Size Limit	2,000 m ² of surface area including floors and sidewalls of excavation.
Gamma Scan Components	100% scan of accessible excavation floors and sidewalls.
Random-Start Systematic Sampling	A minimum of 10 systematic sample locations as determined by establishing a triangular systematic grid in accordance with MARSSIM.
Biased sampling	Only required to resolve potential areas of concern identified by the gamma scan survey.
Class 2 Survey Unit Design Parameters	
Size Limit	10,000 m ² in area surrounding Class 1 excavations to a minimum distance of 10 meters from excavation edges.
Gamma Scan Components	Goal of 100% surface scan of accessible areas with minimum overall coverage requirement of 50%.
Random-Start Systematic Sampling	A minimum of 10 systematic sample locations as determined by establishing a triangular systematic grid in accordance with MARSSIM.
Biased sampling	Only required to resolve potential areas of concern identified by the gamma scan survey.
Class 3 Survey Unit Design Parameters	
Size Limit	No size limit – should be contained within contiguous OU limits.
Gamma Scan Components	No minimum scanning coverage requirement. Goal of 10% coverage targeted towards areas of greatest potential for ROC impacts.
Randomly selected sample locations	A minimum of 10 random sample locations in accordance with MARSSIM.
Biased sampling	Biased samples will be collected resolve potential areas of concern identified by the gamma scan survey, and to investigate areas identified as having higher probability for impacts based on a variety of factors including but not limited to site topography and site history.



4.0 FINAL STATUS SURVEY MEANS AND METHODS

This section describes the field implementation of the FSS design, including the means and methods of sample collection and in situ measurements.

4.1 Gamma Scanning

This section describes the instrumentation and methods of scanning that will be utilized to meet DQOs.

4.1.1 Surface Scanning

Surface scanning will be performed using the Perma-Fix Eagle iScanSM system (or equivalent).

The Eagle iScanSM walkover system uses a 3-in. x 3-in. sodium iodide (NaI) detector with a multichannel analyzer (MCA). The Eagle iScanSM detector will be paired to a global positioning system (GPS) receiver to collect radiological information and positional information simultaneously. In addition to collecting gross gamma measurements, the MCA allows for differentiation of signal within the gamma energy spectrum. Specific regions of interest within the gamma energy spectrum will be evaluated to differentiate between multiple radionuclides.

Surface scanning will be performed in accordance with design parameters described in **Table 3-3**. The general method requirements are summarized below:

- Surfaces should be relatively free of standing snow and water. Performing surveys over land surfaces with greater than 1 in. of water (or 2 in. of snow) should be avoided.
- The detector height above the surface should be less than 10 cm in general, and the maximum height may be less than this as required to meet scan-minimum detectable concentration (MDC) objectives.
- The maximum speed the detectors move over the land surface should be limited to 0.5 meters per second (m/s), and the maximum speed may be less than this as required to meet scan-MDC objectives.
- In order to achieve 100% scan coverage, walkover surveys will use approximately 0.5-meter transects with the detector being moved in a serpentine motion from side to side as the walker advances forward.

4.1.2 Scan MDC

Scan MDC refers to a detector's ability to see radionuclides and confidently distinguish them from background. The DQO for scan MDC is to detect ROCs at a level below their respective cleanup criteria or less.



The selected instrumentation, combined with survey methodology, will be used to confirm the Scan-MDC DQO is achieved in field. Prior to deployment, *a priori* Scan MDCs have been calculated in accordance with MARSSIM. MARSSIM Section 6.7.2.1 describes the methodology used to calculate the Scan MDCs for land areas; this process is demonstrated in **Appendix A** for full spectrum using Equation 5. Results are summarized in

Where: d' = index of sensitivity (from MARSSIM Table 6.5)

cpm_B = background count rate

i = observation interval

ρ = surveyor efficiency

ϵ = instrument efficiency

CF = correlation factor (derived using microshield)

Table 4-1.

$$Scan\ MDC\ \left(\frac{pCi}{g}\right) = \frac{d' * \sqrt{\left(cpm_B * \frac{i}{60}\right) * \left(\frac{60}{i}\right)}}{\sqrt{\rho}} * CF \quad \text{(Equation 5)}$$

Where: d' = index of sensitivity (from MARSSIM Table 6.5)

cpm_B = background count rate

i = observation interval

ρ = surveyor efficiency

ϵ = instrument efficiency

CF = correlation factor (derived using microshield)

Table 4-1. *a priori* Scan MDCs

Detector	Nuclide	Scan MDC (pCi/g)
3-in x 3-in (Gross Gamma)	Ra-226+C	3.4
	Th-230	2807
	Th-232+C	2.5
	U-238+C	118

Note: Estimates of MDCs provided for reference only and are based on conservative assumptions; actual MDCs will be calculated and evaluated in the field to ensure DQOs are achieved.

Note that evaluations of gross gamma data will be made against the most restrictive and easiest to measure Ra-226. Additionally, all decisions relative to SU compliance will be based on offsite



analytical results. Gamma scanning it to be used as a tool to inform sampling locations and to identify potential small areas of relatively-elevated radioactivity that may have been missed by the systematic sampling grid and are not used to determine compliance without supporting sample results. Actual scan MDC will be evaluated continuously using collected data and changes to survey methodology including scan speed, detector height, and detector shielding may be employed to reduce scan MDCs as necessary.

4.2 Sample Collection

This section summarizes the methodology to be implemented to collect samples for FSS purposes. Collection and analysis of samples will be the primary means by which SUs are evaluated for residual concentrations of ROCs. In general, Class 1 SUs and Class 2 SUs are sampled to collect an ROC grab sample from each systematic sampling grid node; Class 3 SUs are sampled by collecting ROC grab samples from each identified random sampling location.

4.2.1 Class 1 SU Sample Collection

Class 1 SUs are excavated SUs not to exceed 2,000 m² in area (sum of floor and sidewalls). Sample collection of Class 1 SUs will consist of collecting samples from exposed surfaces using a stainless-steel trowel and the methodologies presented below. Locations to be sampled will be determined by establishing a random-start systematic sampling grid and each grid node will be sampled using a stainless-steel trowel to collect a surface sample (0-6 in. bgs for floor locations), or a sidewall sample (6 in. interval for sidewall locations) that will be placed in a stainless-steel bowl to be homogenized. An aliquot from the collected and homogenized volume of soil will be transferred to an appropriate sample container in accordance with the sampling and analysis plan (SAP)/quality assurance project plan (QAPP) for the contaminant of concern and be shipped for offsite analysis.

Based on the results of gamma scanning within each SU, if applicable, additional samples may be collected if necessary to address areas of relatively-elevated radioactivity. These biased samples will be collected as discrete grab samples from the point(s) of maximum gamma activity. If the gamma survey does not identify any areas of concern, biased samples are not required.

4.2.2 Class 2 SU Sample Collection

Class 2 SUs will be designed as 10-m buffer areas (not to exceed 10,000 m²) around Class 1



excavations and will be sampled from grid nodes based on a random-start triangular systematic grid established in accordance with MARSSIM guidance. Each sample location (grid node) will be sampled as a discrete grab sample using a stainless-steel trowel to collect a surface sample (0-6 in. bgs). Samples will be homogenized and an aliquot from the collected and homogenized volume of soil will be placed in an appropriate sample container(s) in accordance with the SAP/QAPP for the contaminant of concern and be shipped for offsite analysis.

Based on the results of gamma scanning within each SU, if applicable, additional samples may be collected if necessary to address areas of relatively-elevated activity. These biased samples will be collected as discrete grab samples from the point(s) of maximum gamma activity. If the gamma survey does not identify any areas of concern, a biased sample is not required.

4.2.3 Class 3 SU Sample Collection

Class 3 SUs will be designed to comprise the areas within each OU that are not captured as a Class 1 or Class 2 SU. There is no size limit to a Class 3 unit. Class 3 SU sample locations are selected randomly, these random locations will be selected using a computer program to set up a triangular sampling grid from a random starting location, or by utilizing MARSSIM Table I.6 to select two random numbers between zero and one, and scaling the dimensions of the survey unit (based on an X-Y coordinate measurement system). Once identified, each sample location will be sampled as a discrete grab sample using a stainless-steel trowel to collect a surface sample (0-6 in. bgs). Samples will be homogenized and an aliquot from the collected and homogenized volume of soil will be placed in an appropriate sample container(s) in accordance with the SAP/QAPP for the contaminant of concern and be shipped for offsite analysis.

4.2.4 Sampling Frequency

The types of samples to be collected with each SU are based on the minimum sampling frequency calculated using MARSSIM guidance to ensure adequate samples are collected to perform the WRS test in order to make confident decisions about residual ROC levels. An *a priori* evaluation was performed using RI data to estimate variability and using Ra-226 as the most limiting ROC (lowest RG) with the lowest variability, such that an *a priori* relative shift value was estimated to be >4. As described in **Section 3.4.3**, a conservative relative shift value of 3 was used in conjunction with MARSSIM Table 5.3 to yield an *a priori* minimum sample frequency of 10 samples per Class 1 and Class 2 SU.



Table 4-2 summarizes the sample frequency required for each SU type.

Table 4-2. Minimum Sampling Frequencies

Survey Unit	SU Size Limit	Minimum Sample Frequency
Class 1	$\leq 2,000 \text{ m}^2$	<ul style="list-style-type: none"> 10 systematic grab samples Biased samples if needed (not required)
Class 2	$\leq 10,000 \text{ m}^2$	<ul style="list-style-type: none"> 10 systematic grab samples Biased samples if needed (not required)
Class 3	No limit	<ul style="list-style-type: none"> 10 random grab samples Biased samples if needed (not required, or expected)



5.0 FINAL STATUS SURVEY DATA EVALUATIONS

This section details how survey results will be presented and evaluated. Each SU undergoing FSS will generate two major categories of data: Gamma Scan Results and Analytical Results.

5.1 Gamma Scan Results

Gamma scan results will be plotted on color-coded maps. Each measurement will be correlated to the reference coordinate system and color coding will be applied based on the dataset statistics and/or relative to RGs. Each SU evaluation will include up to three maps of gamma scan results, including plots of gross gamma data, Ra-226 data, Th-232 data, and U-238 data (Th-230 is not a gamma emitter but can be inferred from other uranium series nuclides). The maps will include the following information at a minimum:

- Date of survey
- Identity of surveyor(s)
- Instrumentation used for the survey
- Scale
- Legend of color-coded data points
- Compass orientation
- Maximum measurement result

Gamma scan results will be evaluated to identify areas of relatively-elevated activity and areas with the potential to exceed DCGLs, which may inform the need for additional sample collection if warranted to confirm that DCGLs are not exceeded. As part of the evaluation, actual scan-MDC calculations will be performed to ensure the scan had adequate sensitivity to detect ROCs below the DCGLs.

5.2 Analytical Results

Radiological results will be presented in summary tables that include the following information at a minimum:

- Sample IDs
- Ra-226, Th-230, Th-232, and U-238 results to include:
 - Result
 - Analytical uncertainty
 - Analytical MDA



- Data qualifiers
- Calculation of SOR values for each sample.

Results will be evaluated based on the SOR evaluation performed using Equation 1 (OU1) or Equation 2 (OU2) (refer to Section 3.1.6). In Class 1 areas, any SOR exceedance will be evaluated in accordance with MARSSIM via the WRS test and the EMC test (as described in the following sections), to evaluate the status of the entire SU for compliance with DCGLs. Satisfaction of the SU-wide RAO as demonstrated with these additional test will yield the conclusion that the RAO is satisfied and remediation is complete. If either the WRS test or the EMC test indicate the SU-wide RAO is not achieved, then further action will be needed to resolve the SU failure. Further action may include the collection of additional samples to more precisely delineate elevated areas of concern (to support EMC evaluations), or additional remediation to reduce residual contamination (to address WRS test failures and/or EMC failures). SU failures within Class 1 areas will be addressed via sampling and/or remediation until the RAO is achieved.

In Class 2 and Class 3 areas, SOR exceedance is not expected, and SU failures within Class 2 or Class 3 areas suggest that these areas were misclassified and will result in the elevated areas (i.e., areas which exceed the DCGL SOR) within these SUs being upgraded to a Class 1 area to undergo Class 1 SU design implementation.

5.3 WRS Test

If all sample results for the survey unit have associated concentrations that are less than the release criteria, the survey unit is deemed radiologically appropriate for release. If any of the sample results for the survey unit exceed an appropriate release criteria, the WRS test is performed to determine if the SU as a whole satisfies the RAO. The WRS test is performed through a comparison of measurements from the background reference area to the survey unit. The WRS test is effective when residual radioactivity is uniformly present throughout a survey unit (i.e., the sample distribution is symmetrical). The test is designed to detect whether activity within the SU as a whole exceeds the DCGL_w.

The Null Hypothesis is assumed to be true unless the statistical test indicates that it should be rejected in favor of the alternative. It is assumed that any difference between the reference area and survey unit concentration distributions is due to a shift in the survey unit concentrations to



higher values (i.e. due to the presence of residual radioactivity in addition to background that exceeds cleanup criteria). Survey units may meet the release criteria even though some measurements may be greater than some reference area measurements. Also, survey unit measurements may exceed some reference area measurements by more than the $DCGL_W$. The result of the hypothesis test determines whether the survey unit as a whole meets the release criterion.

Two underlying assumptions of the WRS test are:

1. Samples from the reference area and survey unit are independent, identically distributed random samples; and
2. Each measurement is independent of every other measurement, regardless of the set of samples from which it came.

If all of the sample results are less than the $DCGL_W$ then no WRS statistical evaluation is required. Otherwise perform the WRS test as described below:

Performing the Wilcoxon Rank Sum Test

The WRS test is applied as outlined in the following six steps by MARSSIM. Since there are multiple ROCs, the test is performed on the SOR data.

Step 1

Obtain the adjusted reference area measurements, Z_i , by adding the $DCGL_W$ to each reference area measurement, X_i . $Z_i = X_i + DCGL_W$.

Step 2

The m adjusted reference sample measurements, Z_i , from the reference area and the n sample measurements, Y_i , from the survey unit are pooled and ranked in order of increasing size from 1 to N , where $N = m + n$.

Step 3

If several measurements are tied (i.e., have the same value), they are all assigned the average rank of that group of tied measurements.

Step 4

If there are t less than ($<$) the decision level (L_c) values, they are all given the average of the ranks from 1 to t . Therefore, they are all assigned the rank $t(t+1)/2t = (t+1)/2$, which is the average of the first t integers. If there is more than one detection limit, all observations below the largest



detection limit should be treated as $<$ values.

Step 5

Sum the ranks of the adjusted measurements from the reference area, W_r . Note that since the sum of the first N integers is $N(N+1)/2$, one can equivalently sum the ranks of the measurements from the survey unit, W_s , and compute $W_r = N(N+1)/2 - W_s$.

Step 6

Compare W_r with the critical value given in MARSSIM Table I.4, Critical Values for the WRS Test, for the appropriate values of n , m , and α . If W_r is greater than the tabulated value, reject the Null Hypothesis that the survey unit exceeds the release criterion. The standard deviation of the sample set is then calculated to establish the relative shift of the test. The relative shift is used to investigate whether the survey unit has the proper number of samples (See Section 2.6.2 and Section 4.3.1).

If W_r , the sum of the adjusted reference area ranks from the WRS test, is greater than the applicable critical value, then the mean value for residual radioactivity in the survey unit is less than the $DCGL_W$ to the specified confidence level. In this case, the null hypothesis is rejected and the survey unit is deemed to be appropriate for release, assuming all EMC areas are addressed. If W_r is less than the critical value, the null hypothesis is accepted and the survey unit is not considered to meet the release criteria and additional sampling or further remediation may be evaluated.

5.4 EMC Evaluation

An EMC will be performed on localized surface soil areas and the bottom surface of excavated areas with radioactive concentrations above the $DCGL_W$. The EMC will only be performed for surface (i.e. 0-6 in below ground surface, or below the bottom surface of excavated areas) soil sample locations in Class 1 survey units. The EMC is performed using final analytical data of collected samples from an offsite, accredited, laboratory. Analytical results which exceed the $DCGL$ SOR in Class 2 or Class 3 areas is an indication that the area was misclassified and any such results will prompt a reclassification of the impacted areas into Class 1 SUs requiring remediation.

A surface area EMC is performed in Class 1 areas by comparing an area of elevated (i.e., areas



exceeding the DCGL SOR) residual radioactivity against the $DCGL_{EMC}$. If a measurement exceeding the $DCGL_W$ is confirmed, the size of the area of elevated activity, A (as determined by clean bounding samples); the median concentration, C_A , within it will be determined by sampling the area of elevated contamination and using final offsite laboratory analytical data. Using the area factor, F_A , for the area, A, C_A will not exceed $(F_A) * (DCGL_W)$. Area Factors have been derived using the RESRAD Models presented in the *Former Harshaw Chemical Site Remedial Investigation, Remedial Investigation Report* (USACE 2009), Table 8-12. Original DCGLs were derived using RESRAD version 6.3 whereas area factors were modeled using RESRAD version 7.2. The different versions yielded slightly different values due to updated dose conversion factors. The slight divergences do not negatively impact area factors, which are a relative value, once the results are normalized and the relative ratios are maintained. Table XX presents the area factors for OU1 and Table YY presents the area factors for OU2. Appendix B contains the RESRAD models used to establish the area factors. Area Factors may be interpolated for specific sizes not captured in the following tables.

Table 5-1: OU-1 Area Factors

Nuclide	Area (m ²)								
	1	3	10	30	100	300	1000	3000	10000
Ra-226	9.7	4.4	2.1	1.5	1.2	1.1	1.0	1.0	1.0
Th-230	7.3	4.0	2.1	1.6	1.3	1.2	1.1	1.0	1.0
Th-232	7.2	3.9	2.1	1.5	1.2	1.1	1.1	1.0	1.0
Total U	3.8	2.9	2.1	1.7	1.5	1.3	1.2	1.1	1.0
U-238	3.8	2.9	2.1	1.7	1.5	1.3	1.2	1.1	1.0


Table 5-2: OU-2 Area Factors

Nuclide	Area (m ²)								
	1	3	10	30	100	300	1000	3000	10000
Ra-226	2.1	1.8	1.5	1.3	1.1	1.1	1.0	1.0	1.0
Th-230	2.2	1.9	1.5	1.3	1.1	1.1	1.0	1.0	1.0
Th-232	3.3	2.5	1.7	1.4	1.2	1.1	1.0	1.0	1.0
Total U	3.8	3.2	2.4	2.1	1.8	1.7	1.0	1.0	1.0
U-238	3.8	3.2	2.4	2.1	1.8	1.7	1.0	1.0	1.0

A calculation will be made after the EMC has been completed. The calculation will ensure that the total activity in the survey unit is within release criterion established for the FSS. For the calculation, the average concentration in the elevated area and the average concentration in the entire survey unit (δ) is used. The survey unit fails if the calculation results are greater than one, resulting in further excavation of the survey unit. The calculation follows:

For a single EMC area:

$$\frac{\delta}{DCGL_w} + \frac{(\text{average concentration in elevated area} - \delta)}{(\text{area factor for elevated area})(DCGL_w)} < 1$$

For multiple EMC Areas:

$$\frac{\delta}{DCGL_w} + \sum_{x=1}^n \frac{(\delta_{EMC} - \delta)}{DCGL_{EMC}} < 1$$

where:

δ = is the average concentration of Th-232, Ra-226, U-238 or the SOR over the entire survey unit,

δ_{EMC} = the average concentration of Th-232, Ra-226, U-238 or the SOR over the elevated area x within the survey unit,

$DCGL_w$ = appropriate radionuclide values or unity (for SOR) value,

$DCGL_{EMC}$ = (area factor for elevated area x) X (DCGL),

x = refers to one of the elevated areas within the survey unit, and

n = the total number of elevated areas within the survey unit



6.0 QUALITY ASSURANCE/QUALITY CONTROL

6.1 Project Quality Assurance/Quality Control

Activities associated with this FSSP shall be performed in accordance with written procedures and/or protocols in order to ensure consistent, repeatable results. Topics covered in project procedures and protocols may include proper use of instrumentation, quality control (QC) requirements and equipment limitations.

For all activities associated with the Site remediation, the project QA/QC procedures shall apply. In addition, specific QA/QC requirements are listed below, and project QA/QC will be summarized in the final report.

6.2 Final Status Survey Field Instrumentation

The Project Radiation Safety Officer (RSO) is responsible for determining the instrumentation required to complete the requirements of this work plan. Only instrumentation approved by the Project RSO will be used to collect radiological data. The Project RSO is responsible for ensuring individuals are appropriately trained to use project instrumentation and other equipment, and that instrumentation meets the required detection sensitivities. Instrumentation shall be operated in accordance with either a written procedure or the manufacturer's manual, as determined by the project manager. The procedures and/or manufacturer's manual will provide instructions to field personnel on the proper use and limitations of the instrument.

6.2.1 Calibration

Current calibration/maintenance records are kept onsite for review and inspection for all instruments used for FSS in accordance with the site procedures. Field records will include, at a minimum, the following:

- Name of the equipment
- Equipment identification (model and serial number)
- Manufacturer
- Date of calibration
- Calibration due date

Instrumentation will be maintained and calibrated to the manufacturer's specifications to ensure that required traceability, sensitivity, accuracy, and precision of the equipment/instruments are



maintained. Instruments will be maintained and calibrated in accordance with the American National Standard Radiation Protection Instrumentation Test and Calibration standard (ANSI N323).

6.2.2 Source Checks

Prior to each use, the Eagle iScanSM will go through a gamma energy alignment process. The alignment is performed by making minor adjustments until the spectral energies align to a predetermined channel. Once the alignment is complete, a source response check will be completed. The data generated during this process will be compiled in a summary sheet as part of the instrument record. Perma-Fix's Eagle iScanSM procedure describes the alignment process and the collection of setup data prior to completing a survey. Prior to the commencement of field operations, a site reference location will be selected for the performance of these checks. Source response checks will consist of one-minute integrated counts with the designated source position in a reproducible geometry, performed at the designated location. Background checks will be performed in an identical fashion with the source removed. The results of the background and source response checks will be recorded as separate files. Prior to the start of initial surveys, this procedure will be repeated at least five times to establish average instrument response.

Since the Eagle iScanSM is temperature-sensitive, the alignment will be performed at least two times daily, typically once in the morning and once in the afternoon. Source response checks will be recorded at the beginning and end of each data collection session.

Instrument response to the designated check source will be plotted on control charts and evaluated against the average established at the start of the field activities. A performance criterion of ± 2 sigma of this average will be used as an investigation action level. A performance criterion of ± 3 sigma of this average will be used as a failure level requiring corrective action. The Project RSO will investigate results exceeding ± 3 sigma and will make appropriate corrections to instrument readings if the response is deviated by factors beyond personnel control, such as large humidity or temperature changes. If corrections do not result in the instrument returning the required performance criterion, the instrument must be removed from service.

Instrument response to ambient background will be used to establish a mean background response for each instrument, to monitor gross fluctuations in background activity (e.g., from changes in barometric pressure and other, non-contaminant related causes), and to evaluate detector response.



The background measurements are made solely for the purpose of normalizing each day's survey results and eliminating bias introduced by natural fluctuations in site radiological conditions, if necessary.

During source response checks, instruments used to obtain radiological data should be inspected for physical damage, current calibration, and erroneous readings in accordance with applicable protocols. The individual performing these tasks shall document the results in accordance with the associated instrument protocol. Instrumentation that does not meet the specified requirements of calibration, inspection, or response check will be removed from operation. If the instrument fails the source response check, any data obtained to that point after the last successful source response check will be considered invalid due to faulty instrumentation.

6.2.3 Sampling

Sampling will be conducted in accordance with SOPs and regulatory guidance to ensure that representative samples of high quality are collected. Sample equipment will either be new or decontaminated prior to each use to reduce the potential for cross contamination. Equipment blank samples will be collected from decontaminated equipment prior to use at a rate of one sample per batch of decontaminated equipment with a minimum of one equipment blank sample collected per SU.

The equipment blank will consist of taking a swipe sample to be analyzed onsite for gross alpha/gross beta contamination. Acceptance criteria for these swipe samples shall be indistinguishable from background (i.e., $< \text{bkg} + 2\text{-sigma}$). If results exceeding background + 2-sigma are observed, the entire batch of decontaminated equipment shall be further decontaminated and resampled to obtain a successful blank sample prior to the equipment being used to collect FSS samples.

The primary means of evaluating QA/QC for sampling and analysis at the project level consists of collecting field duplicate samples. **Table 6-1** summarizes the minimum QC sampling requirements; these sampling frequencies are based on the total number of samples collected for FSS in OU1 and OU2; while the goal is to achieve this frequency of QC sampling per SU, a SU with less than 10% QC samples is acceptable provided this frequency is satisfied for the entire project.

**Table 6-1. QC Sample Frequencies**

Sample Target Analyte	Field Duplicate Requirements
Radiological Parameters	10% (project-wide)

6.3 Analytical Data

QA/QC of analytical data will be evaluated using the parameters of Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity (the PARCCS parameters). Refer to the QAPP for acceptance criteria and evaluation methods.

Precision and accuracy will be evaluated through field duplicate samples and laboratory replicate samples along with other laboratory batch QC samples per the contract laboratory SOPs (such as laboratory control samples, laboratory replicate analysis, and crosscheck samples). EFS will rely on the contract laboratory's internal QA/QC program to ensure that all analyzed data satisfies requirements.

Representativeness will primarily be evaluated through field duplicate samples, with results evaluated through Relative Error Ratios, Relative Percent Differences, and/or Normalized Absolute Differences. Blank samples are also used as a measure of representativeness to ensure that results are not being influenced by cross contamination from other samples or equipment.

Comparability will be demonstrated by the contract laboratory's success in blind crosscheck evaluations. To a lesser extent, results from the onsite gamma spectroscopy screening laboratory will also provide some qualitative measures of comparability.

Completeness will be evaluated based on the number of usable data results compared to the total number of samples submitted for analysis. The project completeness requirement is >95% with a goal of 100% usable data. The 95% goal is a project-wide goal and not a SU-specific goal. The FSS sampling design has built in an extra 20% of samples per SU to account for lost or unusable data; therefore, each SU can tolerate up to 20% (i.e., 2 samples) of lost or unusable data and still have enough data to make confident decisions.

Sensitivity refers to the ability of the selected instrumentation and measurement methods to confidently detect the target analyte at the decision level. Analytical laboratory and field screening methods will be selected and verified to ensure that they are sensitive enough to quantify ROC concentrations at or below the DCGLs. Sensitivities are estimated *a priori* to select appropriate



instrumentation and methods, and are verified *a posteriori* to ensure that detection sensitivity DQOs are achieved.

7.0 REPORTING FINAL STATUS SURVEY RESULTS

Reporting of FSS results will be performed in two sequential reports. An initial report will be prepared for each SU and a final report will be prepared for each OU. The initial report, known as a SU data package, will be prepared as soon as all data for a given SU are received and will be used to inform decisions for backfilling excavations or for performing additional remediation and/or FSS data collection. A preliminary SU data package, consisting of onsite data, may also be prepared and used to make at-risk decisions while awaiting final offsite analytical data. The final SU data package will consist of offsite analytical data. The final FSS report will be considered the official decision-supporting document and will be prepared for each OU and contain results for all SUs within a given OU. The general contents of each type of report are detailed below.

7.1 Preliminary Survey Unit Data Packages

Preliminary SU data packages will be created for each SU and include available ROC data related to the FSS, including:

- Details of the SU (ID, location, media, contaminants, dates, excavation depths, size, sampling summary, remedial status, etc.)
- Results of gamma scan surveys
- Maps/coordinates of sample locations
- Results of onsite gamma spectroscopy, if applicable
- Results of onsite equipment blanks
- Identification of all samples collected for all analytes including field duplicates
- Notes relating to remedial evolution and processes including problems encountered along with qualitative assessments of soil conditions relative to ROC contamination
- Photograph log

Preliminary data packages are not intended to be used for decision making but are compiled as a means to ensure that all necessary data have been collected. However, in extreme circumstances (e.g., water infiltration), preliminary data may be used to inform at-risk backfill decisions at the discretion of, and with direction from, USACE.

7.2 Final Survey Unit Data Packages

Final SU data packages will be built upon the preliminary data packages but will include results of offsite analysis for ROCs along with final versions of gamma scan data. A report should be prepared individually for each SU and contain the following:



- Details of the SU (ID, location, media, contaminants, dates, excavation depths, size, sampling summary, remedial status, etc.)
- Final gamma scan results
- Map/coordinates of sample locations
- Final offsite analytical data (tabulated)
- An evaluation of residual ROCs and COCs relative to the RGs
- A summary of all QA/QC results (equipment blanks, field dups)
- Conclusions and recommendations relative to whether RAOs were achieved or whether further investigation/remediation is warranted
- Notes and details of the remedial and FSS evolution
- Photograph log

7.3 Final Status Survey Reports

FSS reports will be prepared for each OU and will include all data related to all SUs within a given OU. Information to be included in the FSS report include:

- Details of the SU (ID, location, media, contaminants, dates, excavation depths, size, sampling summary, remedial status, etc.)
- Final gamma scan results
- Maps/coordinates of sample results
- Final offsite analytical data (tabulated)
- Posting plots of analytical data
- An evaluation of residual ROCs and COCs relative to the RGs
- A summary of all QA/QC results (equipment blanks, field dups, MS/MSD results)
- Conclusions and release decision recommendations
- Notes and details of the remedial and FSS evolution
- Data validation reports
- Quality control summary report
- Instrument QA/QC records
- Backfill conformance results (analytical and placement/compaction)
- As-built drawings
- Analytical data packages



8.0 REFERENCES

- Environmental Protection Agency (EPA) 2000. *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, EPA 402-R-97-016, Rev. 1, August.
- EPA 2006. *Guidance on Systematic Planning Using the Data Quality Objectives Process*, EPA QA/G-4, EPA/240/B-06/001, Office of Environmental Information, Washington, D.C., February.
- EPA 2023. 40 CFR Part 761 Subpart O *Sampling to Verify Completion of Self-Implementing Cleanup and On-Site Disposal of Bulk PCB Remediation Waste and Porous Surfaces in Accordance with 761.61(a)(6)*, Code of Federal Regulations, Washing, D.C., September.
- U.S. Nuclear Regulatory Commission (NRC) 1998. *Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions*, NUREG-1507, June.
- U.S. Army Corps of Engineers (USACE) 2009. *Former Harshaw Chemical Site Remedial Investigation, Remedial Investigation Report*. SAIC, Twinsburg, OH, December.
- USACE 2016. *Technical Project Planning (TPP) Process*, Engineer Manual (EM) 200-1-2, Department of the Army, U.S. Army Corps of Engineers, Washington, DC, February.
- USACE 2021. *Record of Decision for Operable Unit (OU)-1 and OU-2, Former Harshaw Chemical Company Site, Cleveland, Ohio*, USACE Buffalo District. September.



Appendix A

Scan MDC Derivation

Scan MDC Derivation Using NUREG-1507 & MARSSIM Guidance

Instrument: Ludlum 44-20 (3-inch by 3-inch) Sodium Iodide Detector

Instrument Efficiency used from NUREG-1507 Table 6-8:

Nuclides Evaluated:

- 1) Th-230
- 2) Ra-226+C
- 3) Th-232+C
- 4) Natural Uranium

Table 6-8 Nal Scintillation Detector Scan MDCs ERC and CPMR Input Values

Radionuclide/Radioactive Material	ERC ^a μR/h/ pCi/g	1" x 1" Nal Detector		2" x 2" Nal Detector		3" x 3" Nal Detector		FIDLER Nal Detector	
		CPMR ^b cpm/ μR/h	CPMR xERC cpm/ pCi/g	CPMR ^a cpm/ μR/h	CPMR xERC cpm/ pCi/g	CPMR ^a cpm/ μR/h	CPMR xERC cpm/ pCi/g	CPMR ^a cpm/ μR/h	CPMR xERC cpm/ pCi/g
Am-241	3.58E-03	3,701	13.3	12,710	45.6	27,870	99.9	47,540	170
Co-60	1.01E+00	77.1	78.1	429	435	1,165	1,180	102	103
Cs-137	2.47E-01	175	43.2	900	222	2,300	568	253	62.6
Th-230	9.10E-05	2,633	0.239	9,082	0.826	19,920	1.81	31,860	2.90
Ra-226+C in equilibrium	7.10E-01	179	127	841	597	2,087	1,480	582	413
Th-232+C in equilibrium	9.96E-01	191	190	840	836	2,048	2,040	753	750
0.034% Depleted Uranium ^c	5.13E-03	1,072	5.50	3,836	19.7	8,570	43.9	9,841	50.5
0.072% Natural Uranium ^c	4.78E-03	1,130	5.40	3,836	18.3	8,996	43.0	9,379	44.8
3% Enriched Uranium ^c	4.29E-03	1,212	5.20	4,328	18.6	9,567	41.1	8,186	35.1
20% Enriched Uranium ^c	3.08E-03	1,408	4.34	5,027	15.5	11,060	34.1	7,218	22.3
50% Enriched Uranium ^c	2.47E-03	1,431	3.53	5,106	12.6	11,230	27.7	7,085	17.5
75% Enriched Uranium ^c	2.13E-03	1,437	3.06	5,129	10.9	11,270	24.0	7,067	15.1

^aAssumes 0.25-m², 15-centimeter-thick "soil" source uniformly contaminated with radionuclides. Measurement distance is 10 centimeters above the source.

^bWeighted values as described in Section 6.2.5.

^cScan MDC for uranium includes sum of U-238, U-235, and U-234.

NUREG-1507 MDC

$$MDC = \frac{3 + 4.65\sqrt{C_B}}{KT}$$

Where: MDC = minimum detectable concentration
C_B = background count in time, T
K = proportionality constant (from NUREG 1507 Table 6-8)
T = time of count (observation interval)

Step 1: Establish time of count (observation interval)

Measurements are taken and recorded in 1 second intervals
Therefore: T = 1 second

Step 2: Estimate Background Response

Based on experience along with information from the Remedial investigations, a typical 3x3 Nal response to background is expected to be between 9,000 cpm and 15,000 cpm.
Adding a level of conservatism, the background is estimated to be:
Background Count Rate per Minute: 20,000 cpm

Background counts in time, T: C_B = 333.3 counts

Step 3: Estimate Detector Response:
Using NUREG 1507 Table 6-8 Proportionality Constants

Th-230:	1.81 cpm/pCi/g	0.03 cps/pCi/g
Ra-226+C:	1480 cpm/pCi/g	24.67 cps/pCi/g
Th-232+C:	2040 cpm/pCi/g	34.00 cps/pCi/g
Natural Uranium:	43 cpm/pCi/g	0.72 cps/pCi/g

Step 4: Populate variables into MDC Equation to obtain MDC:

Th-230 MDC:	2913.7 pCi/g
Ra-226+C MDC:	3.6 pCi/g
Th-232+C MDC:	2.6 pCi/g
Natural Uranium MDC:	122.6 pCi/g

MARSSIM Scan MDC

$$Scan\ MDC\ \left(\frac{pCi}{g}\right) = \frac{d' * \sqrt{\left(cpm_B * \frac{i}{60}\right) * \left(\frac{60}{i}\right)}}{\frac{\sqrt{\rho}}{\epsilon}}$$

Where: d' = Index of Sensitivity (from MARSSIM Table 6.5)
cpm_B = Background count rate
i = Observation Interval
ρ = Surveyor Efficiency (per MARSSIM Section 6.7.2.1)
ε = cpm/pCi/g (from NUREG Table 6-8)

Step 1: Establish time of count (observation interval)

Measurements are taken and recorded in 1 second intervals
Therefore: i = 1 second

Step 2: Estimate Background Response

Based on experience along with information from the Remedial investigations, a typical 3x3 Nal response to background is expected to be between 9,000 cpm and 15,000 cpm.
Adding a level of conservatism, the background is estimated to be:
Background Count Rate per Minute: 20,000 cpm

Background counts in observation interval, i: cpm_B = 333.3 cps

Step 3: Estimate Detector Response (ε):
Using NUREG 1507 Table 6-8 Proportionality Constants

Th-230:	1.81 cpm/pCi/g	1.81 cpm/pCi/g
Ra-226+C:	1480 cpm/pCi/g	1480.00 cpm/pCi/g
Th-232+C:	2040 cpm/pCi/g	2040.00 cpm/pCi/g
Natural Uranium:	43 cpm/pCi/g	43.00 cpm/pCi/g

Step 4: Select index of sensitivity value:

Based on MARSSIM Table 6.5 and using
True positive rate of 0.95 and a False Positive rate of 0.05:
d' = 3.28

Step 5: Select Surveyor Efficiency:

MARSSIM recommends a Surveyor Efficiency of 0.5
ρ = 0.5

Step 6: Perform the Scan MDC calculation using above equation and variables:

Th-230 Scan MDC:	2807.4 pCi/g
Ra-226+C Scan MDC:	3.4 pCi/g
Th-232+C Scan MDC:	2.5 pCi/g
Natural Uranium Scan MDC:	118.2 pCi/g

Appendix B

Area Factor Derivation – RESRAD Model

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : RESRAD Harshaw OU1 Model AF 1 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1 SM RA-226.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	---	W1(3)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	---	VCZ
R013	Contaminated zone total porosity	---	TPCZ
R013	Contaminated zone field capacity	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	---	HCCZ
R013	Contaminated zone b parameter	---	BCZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)
AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.560E-01	2.556E-01	2.549E-01	2.524E-01	2.455E-01	2.226E-01	1.685E-01	6.351E-02
M(t):	1.024E-02	1.023E-02	1.020E-02	1.010E-02	9.819E-03	8.905E-03	6.739E-03	2.540E-03

Maximum TDOSE(t): 2.560E-01 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 1 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.588E-04	0.0006	1.835E-03	0.0072	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.240E-05	0.0002
Po-210	5.486E-07	0.0000	4.229E-04	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.196E-06	0.0000
Ra-226	2.526E-01	0.9869	8.757E-04	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-05	0.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.528E-01	0.9875	3.133E-03	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.137E-05	0.0003

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.046E-03	0.0080
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.306E-04	0.0017
Ra-226	0.000E+00	0.0000	0.000E+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	0.9903
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.560E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.540E-04	0.0006	2.119E-03	0.0083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.653E-05	0.0002
Po-210	8.596E-08	0.0000	6.627E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-06	0.0000
Ra-226	2.523E-01	0.9869	9.375E-04	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.524E-01	0.9875	3.122E-03	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.114E-05	0.0003

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.329E-03	0.0091
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.748E-05	0.0003
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.532E-01	0.9906
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.556E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.441E-04	0.0006	2.042E-03	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.390E-05	0.0002
Po-210	2.111E-09	0.0000	1.627E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-08	0.0000
Ra-226	2.516E-01	0.9870	1.065E-03	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.517E-01	0.9875	3.109E-03	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.081E-05	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.240E-03	0.0088
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.657E-06	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.527E-01	0.9912
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.549E-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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.139E-04	0.0005	1.616E-03	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.265E-05	0.0002
Po-210	4.900E-15	0.0000	3.777E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-14	0.0000
Ra-226	2.492E-01	0.9871	1.449E-03	0.0057	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.712E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.493E-01	0.9876	3.065E-03	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.978E-05	0.0003

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.773E-03	0.0070
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.846E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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-01	0.9930
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.524E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM RA-226

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.830E-05	0.0002	8.269E-04	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-05	0.0001
Po-210	0.000E+00	0.0000	3.013E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.128E-30	0.0000
Ra-226	2.424E-01	0.9874	2.130E-03	0.0087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-05	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.424E-01	0.9877	2.957E-03	0.0120	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.723E-05	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.070E-04	0.0037
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.065E-28	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.446E-01	0.9963
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.455E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.584E-06	0.0000	7.920E-05	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.090E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.199E-01	0.9878	2.581E-03	0.0116	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-05	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.199E-01	0.9878	2.661E-03	0.0120	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.041E-05	0.0003

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.688E-05	0.0004
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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-01	0.9996
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.226E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM RA-226.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.859E-09	0.0000	9.730E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-09	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.664E-01	0.9878	2.011E-03	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-05	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.664E-01	0.9878	2.011E-03	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-05	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.067E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.685E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.685E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.457E-19	0.0000	6.323E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.669E-19	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.273E-02	0.9878	7.582E-04	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-05	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	6.273E-02	0.9878	7.582E-04	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-05	0.0003

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.935E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.351E-02	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.351E-02	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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	
Pb-210+D	Pb-210+D	1.000E+00	1.543E-03	1.492E-03	1.396E-03	1.104E-03	5.647E-04	5.409E-05	6.645E-08	4.318E-18	
Pb-210+D	Po-210	1.000E+00	5.025E-04	8.368E-04	8.443E-04	6.691E-04	3.423E-04	3.279E-05	4.028E-08	2.617E-18	
Pb-210+D	äDSR(j)		2.046E-03	2.329E-03	2.240E-03	1.773E-03	9.070E-04	8.688E-05	1.067E-07	6.935E-18	
Po-210	Po-210	1.000E+00	4.306E-04	6.748E-05	1.657E-06	3.846E-12	3.069E-28	0.000E+00	0.000E+00	0.000E+00	
Ra-226+D	Ra-226+D	1.000E+00	2.535E-01	2.531E-01	2.524E-01	2.500E-01	2.431E-01	2.205E-01	1.669E-01	6.291E-02	
Ra-226+D	Pb-210+D	1.000E+00	2.411E-05	7.121E-05	1.606E-04	4.284E-04	9.090E-04	1.268E-03	9.990E-04	3.766E-04	
Ra-226+D	Po-210	1.000E+00	5.925E-06	2.837E-05	8.150E-05	2.439E-04	5.357E-04	7.547E-04	5.951E-04	2.243E-04	
Ra-226+D	äDSR(j)		2.535E-01	2.532E-01	2.527E-01	2.507E-01	2.446E-01	2.225E-01	1.685E-01	6.351E-02	
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.222E+04	1.073E+04	1.116E+04	1.410E+04	2.756E+04	2.878E+05	2.342E+08	*7.634E+13	
Po-210	5.806E+04	3.705E+05	1.509E+07	6.500E+12	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	9.861E+01	9.872E+01	9.894E+01	9.974E+01	1.022E+02	1.123E+02	1.484E+02	3.937E+02	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	1.247 ñ 0.002	2.334E-03	1.071E+04	2.046E-03	1.222E+04
Po-210	1.000E+00	0.000E+00	4.306E-04	5.806E+04	4.306E-04	5.806E+04
Ra-226	1.000E+00	0.000E+00	2.535E-01	9.861E+01	2.535E-01	9.861E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.543E-03	1.492E-03	1.396E-03	1.104E-03	5.647E-04	5.409E-05	6.645E-08	4.318E-18	
Pb-210	Ra-226	1.000E+00	2.411E-05	7.121E-05	1.606E-04	4.284E-04	9.090E-04	1.268E-03	9.990E-04	3.766E-04	
Pb-210	äDOSE(j)		1.567E-03	1.564E-03	1.556E-03	1.532E-03	1.474E-03	1.322E-03	9.991E-04	3.766E-04	
Po-210	Pb-210	1.000E+00	5.025E-04	8.368E-04	8.443E-04	6.691E-04	3.423E-04	3.279E-05	4.028E-08	2.617E-18	
Po-210	Po-210	1.000E+00	4.306E-04	6.748E-05	1.657E-06	3.846E-12	3.065E-28	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	5.925E-06	2.837E-05	8.150E-05	2.439E-04	5.357E-04	7.547E-04	5.951E-04	2.243E-04	
Po-210	äDOSE(j)		9.391E-04	9.326E-04	9.275E-04	9.130E-04	8.780E-04	7.875E-04	5.951E-04	2.243E-04	
Ra-226	Ra-226	1.000E+00	2.535E-01	2.531E-01	2.524E-01	2.500E-01	2.431E-01	2.205E-01	1.669E-01	6.291E-02	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.33 seconds

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : RESRAD Harshaw OU1 Model AF 3 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
R011	Area of contaminated zone (m**2)	3.000E+00 1.000E+04	AREA
R011	Thickness of contaminated zone (m)	1.500E+00 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)	3.000E+00 3.000E+00	T(3)
R011	Times for calculations (yr)	1.000E+01 1.000E+01	T(4)
R011	Times for calculations (yr)	3.000E+01 3.000E+01	T(5)
R011	Times for calculations (yr)	1.000E+02 1.000E+02	T(6)
R011	Times for calculations (yr)	3.000E+02 3.000E+02	T(7)
R011	Times for calculations (yr)	1.000E+03 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): Pb-210	1.000E+00 0.000E+00	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00 0.000E+00	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00 0.000E+00	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used 0.000E+00	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used 0.000E+00	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used 0.000E+00	W1(3)
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)	1.330E+00 1.500E+00	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05 1.000E-03	VCZ
R013	Contaminated zone total porosity	5.000E-01 4.000E-01	TPCZ
R013	Contaminated zone field capacity	2.000E-01 2.000E-01	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02 1.000E+01	HCCZ
R013	Contaminated zone b parameter	4.900E+00 5.300E+00	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00 2.000E+00	WIND
R013	Humidity in air (g/m**3)	not used 8.000E+00	HUMID
R013	Evapotranspiration coefficient	4.950E-01 5.000E-01	EVAPTR
R013	Precipitation (m/yr)	9.510E-01 1.000E+00	PRECIP
R013	Irrigation (m/yr)	2.000E-01 2.000E-01	RI
R013	Irrigation mode	overhead overhead	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

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)								
XX								
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.676E-01	5.668E-01	5.652E-01	5.597E-01	5.443E-01	4.937E-01	3.736E-01	1.408E-01
M(t):	2.270E-02	2.267E-02	2.261E-02	2.239E-02	2.177E-02	1.975E-02	1.494E-02	5.633E-03

Maximum TDOSE(t): 5.676E-01 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 3 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.347E-04	0.0006	2.069E-03	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.572E-04	0.0003
Po-210	1.212E-06	0.0000	4.769E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-05	0.0000
Ra-226	5.635E-01	0.9928	9.875E-04	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.531E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.639E-01	0.9934	3.533E-03	0.0062	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.141E-04	0.0004

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	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	0.0045
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.997E-04	0.0009
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.646E-01	0.9946
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.676E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.246E-04	0.0006	2.389E-03	0.0042	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.696E-04	0.0003
Po-210	1.899E-07	0.0000	7.473E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.383E-06	0.0000
Ra-226	5.628E-01	0.9928	1.057E-03	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.631E-01	0.9934	3.521E-03	0.0062	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.134E-04	0.0004

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.883E-03	0.0051
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.830E-05	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.639E-01	0.9948
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.668E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM RA-226

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.038E-04	0.0005	2.303E-03	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.617E-04	0.0003
Po-210	4.664E-09	0.0000	1.835E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.308E-08	0.0000
Ra-226	5.612E-01	0.9929	1.201E-03	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.064E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.615E-01	0.9934	3.505E-03	0.0062	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-04	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.768E-03	0.0049
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.923E-06	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.625E-01	0.9951
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.652E-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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	2.403E-04	0.0004	1.823E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.280E-04	0.0002
Po-210	1.082E-14	0.0000	4.259E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.928E-13	0.0000
Ra-226	5.558E-01	0.9930	1.634E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.137E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.561E-01	0.9935	3.457E-03	0.0062	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.093E-04	0.0004

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.191E-03	0.0039
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.463E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.575E-01	0.9961
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.597E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.229E-04	0.0002	9.325E-04	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.547E-05	0.0001
Po-210	0.000E+00	0.0000	3.398E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-29	0.0000
Ra-226	5.407E-01	0.9933	2.402E-03	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.362E-04	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.408E-01	0.9935	3.334E-03	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.017E-04	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.121E-03	0.0021
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.552E-28	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.432E-01	0.9979
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.443E-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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.177E-05	0.0000	8.931E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.270E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.905E-01	0.9935	2.911E-03	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.750E-04	0.0004
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.905E-01	0.9936	3.000E-03	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.812E-04	0.0004

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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-04	0.0002
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.936E-01	0.9998
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.937E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM RA-226.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.446E-08	0.0000	1.097E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.703E-09	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.712E-01	0.9936	2.268E-03	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-04	0.0004
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.712E-01	0.9936	2.268E-03	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-04	0.0004

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.736E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM RA-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	9.399E-19	0.0000	7.130E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.006E-19	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.399E-01	0.9936	8.550E-04	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.164E-05	0.0004
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.399E-01	0.9936	8.550E-04	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.164E-05	0.0004

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.570E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.408E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.978E-03	1.912E-03	1.788E-03	1.414E-03	7.236E-04	6.931E-05	8.515E-08	5.533E-18
Pb-210+D	Po-210	1.000E+00	5.831E-04	9.709E-04	9.797E-04	7.764E-04	3.972E-04	3.804E-05	4.674E-08	3.037E-18
Pb-210+D	äDSR(j)		2.561E-03	2.883E-03	2.768E-03	2.191E-03	1.121E-03	1.074E-04	1.319E-07	8.570E-18
Po-210	Po-210	1.000E+00	4.997E-04	7.830E-05	1.923E-06	4.463E-12	3.560E-28	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	5.645E-01	5.637E-01	5.622E-01	5.567E-01	5.414E-01	4.911E-01	3.716E-01	1.401E-01
Ra-226+D	Pb-210+D	1.000E+00	3.089E-05	9.125E-05	2.058E-04	5.489E-04	1.165E-03	1.625E-03	1.280E-03	4.826E-04
Ra-226+D	Po-210	1.000E+00	6.875E-06	3.292E-05	9.457E-05	2.830E-04	6.216E-04	8.756E-04	6.904E-04	2.603E-04
Ra-226+D	äDSR(j)		5.646E-01	5.639E-01	5.625E-01	5.575E-01	5.432E-01	4.936E-01	3.736E-01	1.408E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	9.763E+03	8.671E+03	9.032E+03	1.141E+04	2.230E+04	2.329E+05	1.896E+08	*7.634E+13	
Po-210	5.003E+04	3.193E+05	1.300E+07	5.602E+12	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	4.428E+01	4.434E+01	4.445E+01	4.484E+01	4.602E+01	5.065E+01	6.692E+01	1.775E+02	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	1.213 ñ 0.002	2.888E-03	8.657E+03	2.561E-03	9.763E+03
Po-210	1.000E+00	0.000E+00	4.997E-04	5.003E+04	4.997E-04	5.003E+04
Ra-226	1.000E+00	0.000E+00	5.646E-01	4.428E+01	5.646E-01	4.428E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.978E-03	1.912E-03	1.788E-03	1.414E-03	7.236E-04	6.931E-05	8.515E-08	5.533E-18	
Pb-210	Ra-226	1.000E+00	3.089E-05	9.125E-05	2.058E-04	5.489E-04	1.165E-03	1.625E-03	1.280E-03	4.826E-04	
Pb-210	äDOSE(j)		2.008E-03	2.004E-03	1.994E-03	1.963E-03	1.888E-03	1.694E-03	1.280E-03	4.826E-04	
Po-210	Pb-210	1.000E+00	5.831E-04	9.709E-04	9.797E-04	7.764E-04	3.972E-04	3.804E-05	4.674E-08	3.037E-18	
Po-210	Po-210	1.000E+00	4.997E-04	7.830E-05	1.923E-06	4.463E-12	3.552E-28	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	6.875E-06	3.292E-05	9.457E-05	2.830E-04	6.216E-04	8.756E-04	6.904E-04	2.603E-04	
Po-210	äDOSE(j)		1.090E-03	1.082E-03	1.076E-03	1.059E-03	1.019E-03	9.137E-04	6.905E-04	2.603E-04	
Ra-226	Ra-226	1.000E+00	5.645E-01	5.637E-01	5.622E-01	5.567E-01	5.414E-01	4.911E-01	3.716E-01	1.401E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.42 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

[illegible]

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
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Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter	
Menu	Input	Default (If different from user input)	Name	
R011	Area of contaminated zone (m**2)	1.000E+01 1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00 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)	3.000E+00 3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01 1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01 3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02 1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02 3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03 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): Pb-210	1.000E+00 0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00 0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00 0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used 0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used 0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used 0.000E+00	---	W1(3)
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)	1.330E+00 1.500E+00	---	DENSCHZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05 1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01 4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01 2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02 1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00 5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00 2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used 8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01 5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01 1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01 2.000E-01	---	RI
R013	Irrigation mode	overhead overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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	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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

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)								
XX								
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.176E+00	1.175E+00	1.171E+00	1.160E+00	1.128E+00	1.023E+00	7.743E-01	2.919E-01
M(t):	4.705E-02	4.699E-02	4.686E-02	4.640E-02	4.512E-02	4.093E-02	3.097E-02	1.167E-02

Maximum TDOSE(t): 1.176E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.784E-04	0.0006	2.358E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.240E-04	0.0004
Po-210	2.508E-06	0.0000	5.435E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.196E-05	0.0001
Ra-226	1.171E+00	0.9954	1.126E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.172E+00	0.9960	4.027E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.137E-04	0.0006

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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-03	0.0030
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.180E-04	0.0005
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E+00	0.9964
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.176E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.581E-04	0.0006	2.723E-03	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.653E-04	0.0005
Po-210	3.930E-07	0.0000	8.518E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-05	0.0000
Ra-226	1.169E+00	0.9954	1.205E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.170E+00	0.9960	4.013E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.114E-04	0.0006

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.947E-03	0.0034
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.685E-05	0.0001
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.9966
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.175E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.158E-04	0.0005	2.625E-03	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.390E-04	0.0005
Po-210	9.651E-09	0.0000	2.092E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-07	0.0000
Ra-226	1.166E+00	0.9955	1.369E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.167E+00	0.9960	3.996E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.081E-04	0.0006

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.779E-03	0.0032
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.378E-06	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.168E+00	0.9968
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.171E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.870E-04	0.0004	2.077E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.265E-04	0.0004
Po-210	2.240E-14	0.0000	4.855E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-13	0.0000
Ra-226	1.155E+00	0.9956	1.862E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.712E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.155E+00	0.9960	3.940E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.978E-04	0.0006

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.991E-03	0.0026
Po-210	0.000E+00	0.0000	0.000E+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-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.157E+00	0.9974
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.160E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	2.492E-04	0.0002	1.063E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-04	0.0002
Po-210	1.787E-30	0.0000	3.873E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.128E-29	0.0000
Ra-226	1.123E+00	0.9958	2.738E-03	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-04	0.0004
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.124E+00	0.9960	3.801E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.723E-04	0.0006

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.530E-03	0.0014
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.404E-28	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.127E+00	0.9986
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.128E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	2.386E-05	0.0000	1.018E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.090E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.019E+00	0.9960	3.318E-03	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-04	0.0006
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.019E+00	0.9961	3.420E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.041E-04	0.0006

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.466E-04	0.0001
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.023E+00	0.9999
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.023E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	2.932E-08	0.0000	1.251E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-08	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	7.712E-01	0.9961	2.585E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-04	0.0006
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	7.712E-01	0.9961	2.585E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-04	0.0006

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.801E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.743E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	7.743E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.905E-18	0.0000	8.127E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.669E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.907E-01	0.9961	9.746E-04	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-04	0.0006
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.907E-01	0.9961	9.746E-04	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-04	0.0006

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.170E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.919E-01	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.919E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	2.839E-03	2.746E-03	2.568E-03	2.031E-03	1.039E-03	9.951E-05	1.223E-07	7.944E-18
Pb-210+D	Po-210	1.000E+00	7.212E-04	1.201E-03	1.212E-03	9.603E-04	4.913E-04	4.705E-05	5.781E-08	3.756E-18
Pb-210+D	äDSR(j)		3.560E-03	3.947E-03	3.779E-03	2.991E-03	1.530E-03	1.466E-04	1.801E-07	1.170E-17
Po-210	Po-210	1.000E+00	6.180E-04	9.685E-05	2.378E-06	5.520E-12	4.404E-28	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	1.172E+00	1.170E+00	1.167E+00	1.156E+00	1.124E+00	1.020E+00	7.716E-01	2.909E-01
Ra-226+D	Pb-210+D	1.000E+00	4.435E-05	1.310E-04	2.955E-04	7.881E-04	1.672E-03	2.333E-03	1.838E-03	6.929E-04
Ra-226+D	Po-210	1.000E+00	8.503E-06	4.072E-05	1.170E-04	3.501E-04	7.688E-04	1.083E-03	8.540E-04	3.219E-04
Ra-226+D	äDSR(j)		1.172E+00	1.171E+00	1.168E+00	1.157E+00	1.127E+00	1.023E+00	7.743E-01	2.919E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	7.022E+03	6.335E+03	6.615E+03	8.358E+03	1.634E+04	1.706E+05	1.388E+08	*7.634E+13	
Po-210	4.045E+04	2.581E+05	1.051E+07	4.529E+12	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	2.133E+01	2.136E+01	2.141E+01	2.161E+01	2.219E+01	2.444E+01	3.229E+01	8.566E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	1.159 ñ 0.002	3.950E-03	6.329E+03	3.560E-03	7.022E+03
Po-210	1.000E+00	0.000E+00	6.180E-04	4.045E+04	6.180E-04	4.045E+04
Ra-226	1.000E+00	0.000E+00	1.172E+00	2.133E+01	1.172E+00	2.133E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	2.839E-03	2.746E-03	2.568E-03	2.031E-03	1.039E-03	9.951E-05	1.223E-07	7.944E-18	
Pb-210	Ra-226	1.000E+00	4.435E-05	1.310E-04	2.955E-04	7.881E-04	1.672E-03	2.333E-03	1.838E-03	6.929E-04	
Pb-210	äDOSE(j)		2.884E-03	2.877E-03	2.863E-03	2.819E-03	2.711E-03	2.432E-03	1.838E-03	6.929E-04	
Po-210	Pb-210	1.000E+00	7.212E-04	1.201E-03	1.212E-03	9.603E-04	4.913E-04	4.705E-05	5.781E-08	3.756E-18	
Po-210	Po-210	1.000E+00	6.180E-04	9.685E-05	2.378E-06	5.520E-12	4.404E-28	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	8.503E-06	4.072E-05	1.170E-04	3.501E-04	7.688E-04	1.083E-03	8.540E-04	3.219E-04	
Po-210	äDOSE(j)		1.348E-03	1.338E-03	1.331E-03	1.310E-03	1.260E-03	1.130E-03	8.541E-04	3.219E-04	
Ra-226	Ra-226	1.000E+00	1.172E+00	1.170E+00	1.167E+00	1.156E+00	1.124E+00	1.020E+00	7.716E-01	2.909E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.39 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
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Summary : RESRAD Harshaw OU1 Model AF 30 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Summary : RESRAD Harshaw OU1 Model AF 30 SM RA-226

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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	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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	30.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.634E+00	1.632E+00	1.627E+00	1.611E+00	1.567E+00	1.421E+00	1.076E+00	4.055E-01
M(t):	6.537E-02	6.528E-02	6.509E-02	6.446E-02	6.269E-02	5.686E-02	4.302E-02	1.622E-02

Maximum TDOSE(t): 1.634E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	9.170E-04	0.0006	2.655E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.572E-03	0.0010
Po-210	3.467E-06	0.0000	6.120E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-04	0.0001
Ra-226	1.627E+00	0.9954	1.267E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.531E-04	0.0002
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.628E+00	0.9959	4.535E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.141E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.144E-03	0.0031
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.314E-04	0.0005
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.628E+00	0.9963
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.634E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	8.896E-04	0.0005	3.066E-03	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.696E-03	0.0010
Po-210	5.433E-07	0.0000	9.591E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.383E-05	0.0000
Ra-226	1.624E+00	0.9954	1.357E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.625E+00	0.9959	4.519E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.134E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.652E-03	0.0035
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.303E-04	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.626E+00	0.9965
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.632E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	8.325E-04	0.0005	2.955E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.617E-03	0.0010
Po-210	1.334E-08	0.0000	2.355E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.308E-07	0.0000
Ra-226	1.620E+00	0.9954	1.541E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.064E-04	0.0003
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.621E+00	0.9959	4.499E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.405E-03	0.0033
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.200E-06	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.622E+00	0.9967
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.627E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.584E-04	0.0004	2.339E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.280E-03	0.0008
Po-210	3.097E-14	0.0000	5.467E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.928E-12	0.0000
Ra-226	1.604E+00	0.9955	2.097E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.137E-04	0.0005
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.605E+00	0.9959	4.436E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.093E-03	0.0013

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.277E-03	0.0027
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.426E-12	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.607E+00	0.9973
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.611E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM RA-226.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	3.368E-04	0.0002	1.197E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.547E-04	0.0004
Po-210	2.470E-30	0.0000	4.361E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-28	0.0000
Ra-226	1.561E+00	0.9958	3.083E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.362E-03	0.0009
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.561E+00	0.9960	4.280E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.017E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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-03	0.0014
Po-210	0.000E+00	0.0000	0.000E+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-28	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.565E+00	0.9986
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.567E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	3.226E-05	0.0000	1.146E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.270E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.416E+00	0.9960	3.736E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.750E-03	0.0012
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.416E+00	0.9960	3.851E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.812E-03	0.0013

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.096E-04	0.0001
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.9999
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.421E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM RA-226.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.964E-08	0.0000	1.408E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.703E-08	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.071E+00	0.9960	2.911E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-03	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.071E+00	0.9960	2.911E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.575E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.076E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.076E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	2.576E-18	0.0000	9.151E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.006E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.039E-01	0.9960	1.097E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.164E-04	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.039E-01	0.9960	1.097E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.164E-04	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.673E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.055E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.055E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA	AAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	4.174E-03	4.036E-03	3.775E-03	2.986E-03	1.527E-03	1.463E-04	1.797E-07	1.168E-17
Pb-210+D	Po-210	1.000E+00	9.702E-04	1.616E-03	1.630E-03	1.292E-03	6.609E-04	6.330E-05	7.777E-08	5.053E-18
Pb-210+D	äDSR(j)		5.144E-03	5.652E-03	5.405E-03	4.277E-03	2.188E-03	2.096E-04	2.575E-07	1.673E-17
Po-210	Po-210	1.000E+00	8.314E-04	1.303E-04	3.200E-06	7.426E-12	5.924E-28	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	1.628E+00	1.626E+00	1.621E+00	1.606E+00	1.561E+00	1.416E+00	1.072E+00	4.040E-01
Ra-226+D	Pb-210+D	1.000E+00	6.520E-05	1.926E-04	4.344E-04	1.159E-03	2.459E-03	3.429E-03	2.702E-03	1.019E-03
Ra-226+D	Po-210	1.000E+00	1.144E-05	5.478E-05	1.574E-04	4.709E-04	1.034E-03	1.457E-03	1.149E-03	4.331E-04
Ra-226+D	äDSR(j)		1.628E+00	1.626E+00	1.622E+00	1.607E+00	1.565E+00	1.421E+00	1.076E+00	4.055E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	4.860E+03	4.423E+03	4.625E+03	5.845E+03	1.142E+04	1.193E+05	9.709E+07	*7.634E+13	
Po-210	3.007E+04	1.919E+05	7.814E+06	3.367E+12	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	1.535E+01	1.537E+01	1.541E+01	1.555E+01	1.597E+01	1.759E+01	2.324E+01	6.166E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAA	AAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	1.000E+00	1.124 ñ 0.002	5.655E-03	4.421E+03	5.144E-03	4.860E+03
Po-210	1.000E+00	0.000E+00	8.314E-04	3.007E+04	8.314E-04	3.007E+04
Ra-226	1.000E+00	0.000E+00	1.628E+00	1.535E+01	1.628E+00	1.535E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	4.174E-03	4.036E-03	3.775E-03	2.986E-03	1.527E-03	1.463E-04	1.797E-07	1.168E-17		
Pb-210	Ra-226	1.000E+00	6.520E-05	1.926E-04	4.344E-04	1.159E-03	2.459E-03	3.429E-03	2.702E-03	1.019E-03		
Pb-210	äDOSE(j)		4.239E-03	4.229E-03	4.209E-03	4.144E-03	3.986E-03	3.576E-03	2.702E-03	1.019E-03		
Po-210	Pb-210	1.000E+00	9.702E-04	1.616E-03	1.630E-03	1.292E-03	6.609E-04	6.330E-05	7.777E-08	5.053E-18		
Po-210	Po-210	1.000E+00	8.314E-04	1.303E-04	3.200E-06	7.426E-12	5.924E-28	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	1.144E-05	5.478E-05	1.574E-04	4.709E-04	1.034E-03	1.457E-03	1.149E-03	4.331E-04		
Po-210	äDOSE(j)		1.813E-03	1.801E-03	1.791E-03	1.763E-03	1.695E-03	1.520E-03	1.149E-03	4.331E-04		
Ra-226	Ra-226	1.000E+00	1.628E+00	1.626E+00	1.621E+00	1.606E+00	1.561E+00	1.416E+00	1.072E+00	4.040E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15		
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01		
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01		
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15		
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01		
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01		
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.33 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
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Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	1.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

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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

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)	5.000E-02	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 Harshaw OU1 Model AF 100 SM RA-226

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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	suppressed

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	100.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.024E+00	2.021E+00	2.015E+00	1.996E+00	1.941E+00	1.760E+00	1.332E+00	5.021E-01
M(t):	8.095E-02	8.084E-02	8.061E-02	7.982E-02	7.763E-02	7.041E-02	5.328E-02	2.008E-02

Maximum TDOSE(t): 2.024E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 100 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.113E-03	0.0006	3.021E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.240E-03	0.0026
Po-210	4.272E-06	0.0000	6.964E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.196E-04	0.0004
Ra-226	2.010E+00	0.9934	1.442E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-03	0.0006
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.011E+00	0.9939	5.160E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.137E-03	0.0035

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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-03	0.0046
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.420E-03	0.0007
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.013E+00	0.9947
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.024E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.080E-03	0.0005	3.489E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.653E-03	0.0028
Po-210	6.694E-07	0.0000	1.091E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-04	0.0001
Ra-226	2.008E+00	0.9934	1.544E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-03	0.0007
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.009E+00	0.9939	5.142E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.114E-03	0.0035

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.022E-02	0.0051
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.226E-04	0.0001
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.010E+00	0.9948
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.021E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.011E-03	0.0005	3.363E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.390E-03	0.0027
Po-210	1.644E-08	0.0000	2.680E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-06	0.0000
Ra-226	2.002E+00	0.9934	1.754E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-03	0.0008
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.003E+00	0.9939	5.119E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.081E-03	0.0035

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.764E-03	0.0048
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.466E-06	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.005E+00	0.9952
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.015E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	7.993E-04	0.0004	2.662E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.265E-03	0.0021
Po-210	3.816E-14	0.0000	6.220E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-12	0.0000
Ra-226	1.983E+00	0.9936	2.386E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.712E-03	0.0014
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.984E+00	0.9940	5.048E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.978E-03	0.0035

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.726E-03	0.0039
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.988E+00	0.9961
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	1.996E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM RA-226.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.089E-04	0.0002	1.362E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-03	0.0011
Po-210	3.044E-30	0.0000	4.962E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.128E-28	0.0000
Ra-226	1.929E+00	0.9938	3.508E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-03	0.0023
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.929E+00	0.9940	4.870E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.723E-03	0.0035

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.953E-03	0.0020
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.012E-27	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.9980
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.941E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.917E-05	0.0000	1.304E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.090E-04	0.0001
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.750E+00	0.9941	4.251E-03	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-03	0.0033
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.750E+00	0.9941	4.382E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.041E-03	0.0034

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.786E-04	0.0002
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.760E+00	0.9998
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.760E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM RA-226.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	4.812E-08	0.0000	1.602E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.324E+00	0.9941	3.312E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-03	0.0034
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.324E+00	0.9941	3.312E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-03	0.0034

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.651E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.332E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.332E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.127E-18	0.0000	1.041E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.669E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.991E-01	0.9941	1.249E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-03	0.0034
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.991E-01	0.9941	1.249E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-03	0.0034

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.023E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.021E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.021E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM RA-226.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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	7.717E-03	7.463E-03	6.979E-03	5.520E-03	2.824E-03	2.705E-04	3.323E-07	2.159E-17
Pb-210+D	Po-210	1.000E+00	1.657E-03	2.760E-03	2.785E-03	2.207E-03	1.129E-03	1.081E-04	1.328E-07	8.633E-18
Pb-210+D	äDSR(j)		9.374E-03	1.022E-02	9.764E-03	7.726E-03	3.953E-03	3.786E-04	4.651E-07	3.023E-17
Po-210	Po-210	1.000E+00	1.420E-03	2.226E-04	5.466E-06	1.269E-11	1.012E-27	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	2.013E+00	2.010E+00	2.004E+00	1.985E+00	1.930E+00	1.751E+00	1.325E+00	4.995E-01
Ra-226+D	Pb-210+D	1.000E+00	1.205E-04	3.561E-04	8.032E-04	2.142E-03	4.545E-03	6.340E-03	4.995E-03	1.883E-03
Ra-226+D	Po-210	1.000E+00	1.954E-05	9.358E-05	2.688E-04	8.045E-04	1.767E-03	2.489E-03	1.963E-03	7.399E-04
Ra-226+D	äDSR(j)		2.013E+00	2.010E+00	2.005E+00	1.988E+00	1.937E+00	1.760E+00	1.332E+00	5.021E-01
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

The DSR includes contributions from associated (half-life 6 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	2.667E+03	2.446E+03	2.561E+03	3.236E+03	6.324E+03	6.603E+04	5.375E+07	*7.634E+13	
Po-210	1.760E+04	1.123E+05	4.574E+06	1.971E+12	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	1.242E+01	1.244E+01	1.247E+01	1.258E+01	1.291E+01	1.421E+01	1.877E+01	4.979E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	1.092 ñ 0.002	1.023E-02	2.445E+03	9.374E-03	2.667E+03
Po-210	1.000E+00	0.000E+00	1.420E-03	1.760E+04	1.420E-03	1.760E+04
Ra-226	1.000E+00	0.000E+00	2.013E+00	1.242E+01	2.013E+00	1.242E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	7.717E-03	7.463E-03	6.979E-03	5.520E-03	2.824E-03	2.705E-04	3.323E-07	2.159E-17		
Pb-210	Ra-226	1.000E+00	1.205E-04	3.561E-04	8.032E-04	2.142E-03	4.545E-03	6.340E-03	4.995E-03	1.883E-03		
Pb-210	äDOSE(j)		7.837E-03	7.819E-03	7.782E-03	7.662E-03	7.369E-03	6.611E-03	4.996E-03	1.883E-03		
Po-210	Pb-210	1.000E+00	1.657E-03	2.760E-03	2.785E-03	2.207E-03	1.129E-03	1.081E-04	1.328E-07	8.633E-18		
Po-210	Po-210	1.000E+00	1.420E-03	2.226E-04	5.466E-06	1.269E-11	1.012E-27	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	1.954E-05	9.358E-05	2.688E-04	8.045E-04	1.767E-03	2.489E-03	1.963E-03	7.399E-04		
Po-210	äDOSE(j)		3.097E-03	3.076E-03	3.059E-03	3.011E-03	2.896E-03	2.597E-03	1.963E-03	7.399E-04		
Ra-226	Ra-226	1.000E+00	2.013E+00	2.010E+00	2.004E+00	1.985E+00	1.930E+00	1.751E+00	1.325E+00	4.995E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15		
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01		
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01		
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15		
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01		
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01		
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.33 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU1 Model AF 300 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	---	W1(3)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENSCHZ
R013	Contaminated zone erosion rate (m/yr)	---	VCHZ
R013	Contaminated zone total porosity	---	TPCHZ
R013	Contaminated zone field capacity	---	FCHZ
R013	Contaminated zone hydraulic conductivity (m/yr)	---	HCHZ
R013	Contaminated zone b parameter	---	BCHZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSTZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT

Summary : RESRAD Harshaw OU1 Model AF 300 SM RA-226

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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	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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 300 SM RA-226

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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

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)	5.000E-02	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

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

[illegible]

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)								
XX								
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.207E+00	2.204E+00	2.198E+00	2.176E+00	2.116E+00	1.919E+00	1.452E+00	5.474E-01
M(t):	8.827E-02	8.815E-02	8.790E-02	8.704E-02	8.464E-02	7.676E-02	5.809E-02	2.190E-02

Maximum TDOSE(t): 2.207E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 300 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.194E-03	0.0005	3.396E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.572E-02	0.0071
Po-210	4.620E-06	0.0000	7.828E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E-03	0.0010
Ra-226	2.178E+00	0.9871	1.621E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.531E-03	0.0016
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.180E+00	0.9877	5.800E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.141E-02	0.0097

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.031E-02	0.0092
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.946E-03	0.0013
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.184E+00	0.9895
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.207E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.158E-03	0.0005	3.922E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.696E-02	0.0077
Po-210	7.239E-07	0.0000	1.227E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.383E-04	0.0002
Ra-226	2.175E+00	0.9872	1.735E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-03	0.0018
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.177E+00	0.9877	5.780E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.134E-02	0.0097

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.204E-02	0.0100
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.617E-04	0.0002
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.181E+00	0.9898
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.204E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 300 SM RA-226.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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.084E-03	0.0005	3.780E-03	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.617E-02	0.0074
Po-210	1.778E-08	0.0000	3.012E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.308E-06	0.0000
Ra-226	2.169E+00	0.9872	1.971E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.064E-03	0.0023
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.171E+00	0.9877	5.754E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.124E-02	0.0097

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.103E-02	0.0096
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.134E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.176E+00	0.9904
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.198E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM RA-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	8.570E-04	0.0004	2.992E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.280E-02	0.0059
Po-210	4.126E-14	0.0000	6.991E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.928E-11	0.0000
Ra-226	2.149E+00	0.9874	2.682E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.137E-03	0.0037
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.149E+00	0.9878	5.674E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.093E-02	0.0096

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.665E-02	0.0076
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.632E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.159E+00	0.9924
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	2.176E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.385E-04	0.0002	1.531E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.547E-03	0.0031
Po-210	3.292E-30	0.0000	5.578E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.538E-27	0.0000
Ra-226	2.090E+00	0.9877	3.943E-03	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.362E-02	0.0064
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.090E+00	0.9879	5.474E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.017E-02	0.0095

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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-03	0.0040
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.099E-27	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.107E+00	0.9960
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.116E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.200E-05	0.0000	1.466E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.270E-04	0.0003
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.896E+00	0.9880	4.778E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.750E-02	0.0091
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.896E+00	0.9880	4.925E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.812E-02	0.0094

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.156E-04	0.0004
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E+00	0.9996
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	1.919E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	5.159E-08	0.0000	1.801E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.703E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.435E+00	0.9880	3.723E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-02	0.0094
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.435E+00	0.9880	3.723E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-02	0.0094

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.002E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.452E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.452E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.353E-18	0.0000	1.170E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.006E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.409E-01	0.9880	1.404E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.164E-03	0.0094
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.409E-01	0.9880	1.404E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.164E-03	0.0094

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.511E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.474E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.474E-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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.687E-02	1.631E-02	1.526E-02	1.207E-02	6.174E-03	5.913E-04	7.264E-07	4.721E-17
Pb-210+D	Po-210	1.000E+00	3.438E-03	5.725E-03	5.777E-03	4.578E-03	2.342E-03	2.243E-04	2.756E-07	1.791E-17
Pb-210+D	äDSR(j)		2.031E-02	2.204E-02	2.103E-02	1.665E-02	8.516E-03	8.156E-04	1.002E-06	6.511E-17
Po-210	Po-210	1.000E+00	2.946E-03	4.617E-04	1.134E-05	2.632E-11	2.099E-27	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	2.183E+00	2.180E+00	2.174E+00	2.153E+00	2.094E+00	1.899E+00	1.437E+00	5.418E-01
Ra-226+D	Pb-210+D	1.000E+00	2.635E-04	7.785E-04	1.756E-03	4.683E-03	9.937E-03	1.386E-02	1.092E-02	4.117E-03
Ra-226+D	Po-210	1.000E+00	4.054E-05	1.941E-04	5.576E-04	1.669E-03	3.665E-03	5.163E-03	4.071E-03	1.535E-03
Ra-226+D	äDSR(j)		2.184E+00	2.181E+00	2.176E+00	2.159E+00	2.107E+00	1.918E+00	1.452E+00	5.474E-01
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

The DSR includes contributions from associated (half-life 6 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.231E+03	1.134E+03	1.189E+03	1.502E+03	2.936E+03	3.065E+04	2.495E+07	*7.634E+13	
Po-210	8.485E+03	5.415E+04	2.205E+06	9.500E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	1.145E+01	1.146E+01	1.149E+01	1.158E+01	1.186E+01	1.303E+01	1.722E+01	4.567E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	1.071 ñ 0.002	2.204E-02	1.134E+03	2.031E-02	1.231E+03
Po-210	1.000E+00	0.000E+00	2.946E-03	8.485E+03	2.946E-03	8.485E+03
Ra-226	1.000E+00	0.000E+00	2.184E+00	1.145E+01	2.184E+00	1.145E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.687E-02	1.631E-02	1.526E-02	1.207E-02	6.174E-03	5.913E-04	7.264E-07	4.721E-17	
Pb-210	Ra-226	1.000E+00	2.635E-04	7.785E-04	1.756E-03	4.683E-03	9.937E-03	1.386E-02	1.092E-02	4.117E-03	
Pb-210	äDOSE(j)		1.713E-02	1.709E-02	1.701E-02	1.675E-02	1.611E-02	1.445E-02	1.092E-02	4.117E-03	
Po-210	Pb-210	1.000E+00	3.438E-03	5.725E-03	5.777E-03	4.578E-03	2.342E-03	2.243E-04	2.756E-07	1.791E-17	
Po-210	Po-210	1.000E+00	2.946E-03	4.617E-04	1.134E-05	2.632E-11	2.099E-27	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	4.054E-05	1.941E-04	5.576E-04	1.669E-03	3.665E-03	5.163E-03	4.071E-03	1.535E-03	
Po-210	äDOSE(j)		6.425E-03	6.381E-03	6.346E-03	6.247E-03	6.007E-03	5.388E-03	4.072E-03	1.535E-03	
Ra-226	Ra-226	1.000E+00	2.183E+00	2.180E+00	2.174E+00	2.153E+00	2.094E+00	1.899E+00	1.437E+00	5.418E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.34 seconds

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
R011	Area of contaminated zone (m**2)	1.000E+03	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	BRDL
R011	Time since placement of material (yr)	0.000E+00	TI
R011	Times for calculations (yr)	1.000E+00	T(2)
R011	Times for calculations (yr)	3.000E+00	T(3)
R011	Times for calculations (yr)	1.000E+01	T(4)
R011	Times for calculations (yr)	3.000E+01	T(5)
R011	Times for calculations (yr)	1.000E+02	T(6)
R011	Times for calculations (yr)	3.000E+02	T(7)
R011	Times for calculations (yr)	1.000E+03	T(8)
R011	Times for calculations (yr)	not used	T(9)
R011	Times for calculations (yr)	not used	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	W1(3)
R013	Cover depth (m)	0.000E+00	COVER0
R013	Density of cover material (g/cm**3)	not used	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	VCV
R013	Density of contaminated zone (g/cm**3)	1.330E+00	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	V CZ
R013	Contaminated zone total porosity	5.000E-01	TPCZ
R013	Contaminated zone field capacity	2.000E-01	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	HCCZ
R013	Contaminated zone b parameter	4.900E+00	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	WIND
R013	Humidity in air (g/m**3)	not used	HUMID
R013	Evapotranspiration coefficient	4.950E-01	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	PRECIP
R013	Irrigation (m/yr)	2.000E-01	RI
R013	Irrigation mode	overhead	IDITCH
R013	Runoff coefficient	2.000E-01	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	WAREA
R013	Accuracy for water/soil computations	not used	EPS
R014	Density of saturated zone (g/cm**3)	not used	DENSAQ
R014	Saturated zone total porosity	not used	TPSZ
R014	Saturated zone effective porosity	not used	EPSZ
R014	Saturated zone field capacity	not used	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	HCSZ
R014	Saturated zone hydraulic gradient	not used	HGWT
R014	Saturated zone b parameter	not used	BSZ
R014	Water table drop rate (m/yr)	not used	VWT

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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	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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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

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)	5.000E-02	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

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

[illegible]

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1000 SM RA-226.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1000.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.363E+00	2.360E+00	2.353E+00	2.330E+00	2.265E+00	2.054E+00	1.554E+00	5.859E-01
M(t):	9.454E-02	9.440E-02	9.413E-02	9.320E-02	9.061E-02	8.216E-02	6.217E-02	2.344E-02

Maximum TDOSE(t): 2.363E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.242E-03	0.0005	3.855E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.240E-02	0.0222
Po-210	4.847E-06	0.0000	8.887E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.196E-03	0.0030
Ra-226	2.284E+00	0.9665	1.840E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-02	0.0050
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.285E+00	0.9670	6.584E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.137E-02	0.0302

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.750E-02	0.0243
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.090E-03	0.0034
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.298E+00	0.9722
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.363E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.205E-03	0.0005	4.452E-03	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.653E-02	0.0240
Po-210	7.596E-07	0.0000	1.393E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-03	0.0005
Ra-226	2.281E+00	0.9666	1.970E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-02	0.0057
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.282E+00	0.9671	6.562E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.114E-02	0.0301

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.219E-02	0.0264
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.268E-03	0.0005
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.9731
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.360E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.128E-03	0.0005	4.291E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.390E-02	0.0229
Po-210	1.865E-08	0.0000	3.420E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-05	0.0000
Ra-226	2.275E+00	0.9667	2.238E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-02	0.0072
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.276E+00	0.9671	6.533E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.081E-02	0.0301

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.932E-02	0.0252
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.113E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.294E+00	0.9748
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.353E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	8.921E-04	0.0004	3.397E-03	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.265E-02	0.0183
Po-210	4.330E-14	0.0000	7.938E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-11	0.0000
Ra-226	2.253E+00	0.9669	3.045E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.712E-02	0.0116
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.254E+00	0.9673	6.442E-03	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.978E-02	0.0299

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.694E-02	0.0201
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.226E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.283E+00	0.9799
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.330E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1000 SM RA-226.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.564E-04	0.0002	1.738E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-02	0.0096
Po-210	3.454E-30	0.0000	6.333E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.128E-27	0.0000
Ra-226	2.191E+00	0.9674	4.477E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-02	0.0200
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.192E+00	0.9676	6.214E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.723E-02	0.0297

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.402E-02	0.0106
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.765E-27	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.241E+00	0.9894
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.265E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1000 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.372E-05	0.0000	1.664E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.090E-03	0.0010
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.988E+00	0.9678	5.425E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-02	0.0284
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.988E+00	0.9679	5.591E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.041E-02	0.0294

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-03	0.0011
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.052E+00	0.9989
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.054E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	5.371E-08	0.0000	2.045E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.504E+00	0.9679	4.227E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-02	0.0294
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.504E+00	0.9679	4.227E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-02	0.0294

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.826E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.554E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.554E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM RA-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.490E-18	0.0000	1.329E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.669E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.671E-01	0.9679	1.593E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-02	0.0294
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.671E-01	0.9679	1.593E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-02	0.0294

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.836E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.859E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.859E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	4.806E-02	4.647E-02	4.346E-02	3.437E-02	1.759E-02	1.684E-03	2.069E-06	1.345E-16
Pb-210+D	Po-210	1.000E+00	9.441E-03	1.572E-02	1.586E-02	1.257E-02	6.431E-03	6.160E-04	7.567E-07	4.917E-17
Pb-210+D	äDSR(j)		5.750E-02	6.219E-02	5.932E-02	4.694E-02	2.402E-02	2.300E-03	2.826E-06	1.836E-16
Po-210	Po-210	1.000E+00	8.090E-03	1.268E-03	3.113E-05	7.226E-11	5.765E-27	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	2.297E+00	2.294E+00	2.287E+00	2.265E+00	2.203E+00	1.998E+00	1.512E+00	5.700E-01
Ra-226+D	Pb-210+D	1.000E+00	7.507E-04	2.218E-03	5.002E-03	1.334E-02	2.831E-02	3.948E-02	3.111E-02	1.173E-02
Ra-226+D	Po-210	1.000E+00	1.113E-04	5.330E-04	1.531E-03	4.583E-03	1.006E-02	1.418E-02	1.118E-02	4.214E-03
Ra-226+D	äDSR(j)		2.298E+00	2.297E+00	2.294E+00	2.283E+00	2.241E+00	2.052E+00	1.554E+00	5.859E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.348E+02	4.020E+02	4.214E+02	5.326E+02	1.041E+03	1.087E+04	8.847E+06	*7.634E+13	
Po-210	3.090E+03	1.972E+04	8.030E+05	3.460E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	1.088E+01	1.089E+01	1.090E+01	1.095E+01	1.115E+01	1.218E+01	1.608E+01	4.267E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	1.058 ñ 0.002	6.220E-02	4.019E+02	5.750E-02	4.348E+02
Po-210	1.000E+00	0.000E+00	8.090E-03	3.090E+03	8.090E-03	3.090E+03
Ra-226	1.000E+00	0.000E+00	2.298E+00	1.088E+01	2.298E+00	1.088E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	4.806E-02	4.647E-02	4.346E-02	3.437E-02	1.759E-02	1.684E-03	2.069E-06	1.345E-16		
Pb-210	Ra-226	1.000E+00	7.507E-04	2.218E-03	5.002E-03	1.334E-02	2.831E-02	3.948E-02	3.111E-02	1.173E-02		
Pb-210	äDOSE(j)		4.881E-02	4.869E-02	4.846E-02	4.771E-02	4.589E-02	4.117E-02	3.111E-02	1.173E-02		
Po-210	Pb-210	1.000E+00	9.441E-03	1.572E-02	1.586E-02	1.257E-02	6.431E-03	6.160E-04	7.567E-07	4.917E-17		
Po-210	Po-210	1.000E+00	8.090E-03	1.268E-03	3.113E-05	7.226E-11	5.765E-27	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	1.113E-04	5.330E-04	1.531E-03	4.583E-03	1.006E-02	1.418E-02	1.118E-02	4.214E-03		
Po-210	äDOSE(j)		1.764E-02	1.752E-02	1.742E-02	1.715E-02	1.649E-02	1.479E-02	1.118E-02	4.214E-03		
Ra-226	Ra-226	1.000E+00	2.297E+00	2.294E+00	2.287E+00	2.265E+00	2.203E+00	1.998E+00	1.512E+00	5.700E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15		
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01		
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01		
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15		
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01		
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01		
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.34 seconds

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Time = 0.000E+00	9
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Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
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Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	3.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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	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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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

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)	5.000E-02	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

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

[illegible]

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3000.00 square meters	Pb-210 1.000E+00
Thickness: 1.50 meters	Po-210 1.000E+00
Cover Depth: 0.00 meters	Ra-226 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.411E+00	2.408E+00	2.401E+00	2.377E+00	2.311E+00	2.096E+00	1.586E+00	5.979E-01
M(t):	9.646E-02	9.632E-02	9.605E-02	9.510E-02	9.246E-02	8.384E-02	6.344E-02	2.391E-02

Maximum TDOSE(t): 2.411E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.270E-03	0.0005	4.324E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.240E-02	0.0217
Po-210	4.953E-06	0.0000	9.966E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.196E-03	0.0030
Ra-226	2.331E+00	0.9668	2.064E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-02	0.0049
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.333E+00	0.9673	7.384E-03	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.137E-02	0.0296

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.799E-02	0.0240
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.198E-03	0.0034
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.345E+00	0.9726
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.411E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.233E-03	0.0005	4.993E-03	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.653E-02	0.0235
Po-210	7.762E-07	0.0000	1.562E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-03	0.0005
Ra-226	2.328E+00	0.9669	2.209E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-02	0.0056
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.329E+00	0.9674	7.359E-03	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.114E-02	0.0295

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.276E-02	0.0261
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.285E-03	0.0005
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.344E+00	0.9734
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.408E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.153E-03	0.0005	4.812E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.390E-02	0.0224
Po-210	1.906E-08	0.0000	3.835E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-05	0.0000
Ra-226	2.322E+00	0.9670	2.510E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-02	0.0070
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.323E+00	0.9675	7.326E-03	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.081E-02	0.0295

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.987E-02	0.0249
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.155E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.341E+00	0.9751
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.401E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	9.123E-04	0.0004	3.809E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.265E-02	0.0179
Po-210	4.424E-14	0.0000	8.902E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-11	0.0000
Ra-226	2.300E+00	0.9672	3.415E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.712E-02	0.0114
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.300E+00	0.9676	7.224E-03	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.978E-02	0.0293

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.738E-02	0.0199
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.322E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.330E+00	0.9801
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.377E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.667E-04	0.0002	1.949E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-02	0.0094
Po-210	3.530E-30	0.0000	7.102E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.128E-27	0.0000
Ra-226	2.237E+00	0.9677	5.020E-03	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-02	0.0196
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.237E+00	0.9679	6.969E-03	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.723E-02	0.0291

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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-02	0.0105
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.842E-27	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.287E+00	0.9895
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.311E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.470E-05	0.0000	1.867E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.090E-03	0.0010
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.029E+00	0.9682	6.084E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-02	0.0278
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.029E+00	0.9682	6.270E-03	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.041E-02	0.0288

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.322E-03	0.0011
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.094E+00	0.9989
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.096E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 3000 SM RA-226.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	5.492E-08	0.0000	2.293E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.536E+00	0.9682	4.740E-03	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-02	0.0288
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.536E+00	0.9682	4.740E-03	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-02	0.0288

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.852E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.586E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.586E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM RA-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 3000 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.569E-18	0.0000	1.490E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.669E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.789E-01	0.9682	1.787E-03	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-02	0.0288
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	5.789E-01	0.9682	1.787E-03	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-02	0.0288

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.853E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.979E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.979E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	4.843E-02	4.683E-02	4.379E-02	3.464E-02	1.772E-02	1.697E-03	2.085E-06	1.355E-16
Pb-210+D	Po-210	1.000E+00	9.567E-03	1.593E-02	1.607E-02	1.274E-02	6.517E-03	6.242E-04	7.668E-07	4.983E-17
Pb-210+D	äDSR(j)		5.799E-02	6.276E-02	5.987E-02	4.738E-02	2.424E-02	2.322E-03	2.852E-06	1.853E-16
Po-210	Po-210	1.000E+00	8.198E-03	1.285E-03	3.155E-05	7.322E-11	5.842E-27	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	2.344E+00	2.341E+00	2.335E+00	2.312E+00	2.248E+00	2.039E+00	1.543E+00	5.818E-01
Ra-226+D	Pb-210+D	1.000E+00	7.565E-04	2.235E-03	5.040E-03	1.344E-02	2.852E-02	3.979E-02	3.135E-02	1.182E-02
Ra-226+D	Po-210	1.000E+00	1.128E-04	5.402E-04	1.552E-03	4.644E-03	1.020E-02	1.437E-02	1.133E-02	4.271E-03
Ra-226+D	äDSR(j)		2.345E+00	2.344E+00	2.341E+00	2.330E+00	2.287E+00	2.094E+00	1.586E+00	5.979E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.311E+02	3.983E+02	4.176E+02	5.277E+02	1.031E+03	1.077E+04	8.766E+06	*7.634E+13	
Po-210	3.050E+03	1.946E+04	7.924E+05	3.414E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	1.066E+01	1.067E+01	1.068E+01	1.073E+01	1.093E+01	1.194E+01	1.576E+01	4.182E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	1.059 ñ 0.002	6.277E-02	3.983E+02	5.799E-02	4.311E+02
Po-210	1.000E+00	0.000E+00	8.198E-03	3.050E+03	8.198E-03	3.050E+03
Ra-226	1.000E+00	0.000E+00	2.345E+00	1.066E+01	2.345E+00	1.066E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	4.843E-02	4.683E-02	4.379E-02	3.464E-02	1.772E-02	1.697E-03	2.085E-06	1.355E-16	
Pb-210	Ra-226	1.000E+00	7.565E-04	2.235E-03	5.040E-03	1.344E-02	2.852E-02	3.979E-02	3.135E-02	1.182E-02	
Pb-210	äDOSE(j)		4.918E-02	4.907E-02	4.884E-02	4.808E-02	4.624E-02	4.148E-02	3.135E-02	1.182E-02	
Po-210	Pb-210	1.000E+00	9.567E-03	1.593E-02	1.607E-02	1.274E-02	6.517E-03	6.242E-04	7.668E-07	4.983E-17	
Po-210	Po-210	1.000E+00	8.198E-03	1.285E-03	3.155E-05	7.322E-11	5.842E-27	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	1.128E-04	5.402E-04	1.552E-03	4.644E-03	1.020E-02	1.437E-02	1.133E-02	4.271E-03	
Po-210	äDOSE(j)		1.788E-02	1.775E-02	1.766E-02	1.738E-02	1.671E-02	1.499E-02	1.133E-02	4.271E-03	
Ra-226	Ra-226	1.000E+00	2.344E+00	2.341E+00	2.335E+00	2.312E+00	2.248E+00	2.039E+00	1.543E+00	5.818E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.33 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

[illegible]

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU1 Model AF 10000 SM RA-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T (4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T (6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T (7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1 (1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1 (2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1 (3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Summary : RESRAD Harshaw OU1 Model AF 10000 SM RA-226

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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	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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
=====					
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
=====					
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
=====					
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 10000 SM RA-226

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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

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)	5.000E-02	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

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

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

Summary : RESRAD Harshaw OU1 Model AF 10000 SM RA-226

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 10000.00 square meters	Pb-210 1.000E+00
Thickness: 1.50 meters	Po-210 1.000E+00
Cover Depth: 0.00 meters	Ra-226 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.478E+00	2.475E+00	2.468E+00	2.443E+00	2.375E+00	2.154E+00	1.630E+00	6.144E-01
M(t):	9.913E-02	9.898E-02	9.870E-02	9.773E-02	9.501E-02	8.615E-02	6.519E-02	2.458E-02

Maximum TDOSE(t): 2.478E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.308E-03	0.0005	4.895E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.240E-02	0.0211
Po-210	5.097E-06	0.0000	1.128E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.196E-03	0.0029
Ra-226	2.397E+00	0.9673	2.337E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.177E-02	0.0048
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.398E+00	0.9678	8.360E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.137E-02	0.0288

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.860E-02	0.0236
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.330E-03	0.0034
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.411E+00	0.9730
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	2.478E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.269E-03	0.0005	5.653E-03	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.653E-02	0.0228
Po-210	7.987E-07	0.0000	1.768E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-03	0.0005
Ra-226	2.394E+00	0.9674	2.501E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-02	0.0054
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.395E+00	0.9679	8.331E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.114E-02	0.0287

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.346E-02	0.0256
Po-210	0.000E+00	0.0000	0.000E+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-03	0.0005
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.9738
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.475E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.188E-03	0.0005	5.448E-03	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.390E-02	0.0218
Po-210	1.962E-08	0.0000	4.342E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-05	0.0000
Ra-226	2.387E+00	0.9675	2.842E-03	0.0012	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.688E-02	0.0068
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.388E+00	0.9679	8.295E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.081E-02	0.0287

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.054E-02	0.0245
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.206E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.9755
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.468E+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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	9.396E-04	0.0004	4.313E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.265E-02	0.0175
Po-210	4.553E-14	0.0000	1.008E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.428E-11	0.0000
Ra-226	2.364E+00	0.9677	3.866E-03	0.0016	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.712E-02	0.0111
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.365E+00	0.9681	8.179E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.978E-02	0.0286

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.791E-02	0.0196
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.440E-11	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.9804
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.443E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.807E-04	0.0002	2.206E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.182E-02	0.0092
Po-210	3.632E-30	0.0000	8.040E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.128E-27	0.0000
Ra-226	2.300E+00	0.9682	5.684E-03	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.540E-02	0.0191
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.300E+00	0.9684	7.890E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.723E-02	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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.451E-02	0.0103
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.936E-27	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.351E+00	0.9897
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.375E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.604E-05	0.0000	2.113E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.090E-03	0.0010
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.086E+00	0.9686	6.888E-03	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-02	0.0271
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.086E+00	0.9687	7.099E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.041E-02	0.0280

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.348E-03	0.0011
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.152E+00	0.9989
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.154E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	5.656E-08	0.0000	2.596E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.568E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.579E+00	0.9687	5.367E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-02	0.0280
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.579E+00	0.9687	5.367E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.566E-02	0.0280

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.884E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.630E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.630E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.675E-18	0.0000	1.687E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.669E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.952E-01	0.9687	2.023E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-02	0.0280
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	5.952E-01	0.9687	2.023E-03	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-02	0.0280

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.874E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.144E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	6.144E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	4.888E-02	4.727E-02	4.421E-02	3.496E-02	1.789E-02	1.713E-03	2.105E-06	1.368E-16
Pb-210+D	Po-210	1.000E+00	9.721E-03	1.619E-02	1.633E-02	1.294E-02	6.622E-03	6.342E-04	7.791E-07	5.063E-17
Pb-210+D	äDSR(j)		5.860E-02	6.346E-02	6.054E-02	4.791E-02	2.451E-02	2.348E-03	2.884E-06	1.874E-16
Po-210	Po-210	1.000E+00	8.330E-03	1.305E-03	3.206E-05	7.440E-11	5.936E-27	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	2.410E+00	2.407E+00	2.400E+00	2.377E+00	2.312E+00	2.097E+00	1.587E+00	5.981E-01
Ra-226+D	Pb-210+D	1.000E+00	7.636E-04	2.256E-03	5.088E-03	1.357E-02	2.879E-02	4.016E-02	3.164E-02	1.193E-02
Ra-226+D	Po-210	1.000E+00	1.146E-04	5.489E-04	1.577E-03	4.718E-03	1.036E-02	1.460E-02	1.151E-02	4.339E-03
Ra-226+D	äDSR(j)		2.411E+00	2.410E+00	2.407E+00	2.395E+00	2.351E+00	2.152E+00	1.630E+00	6.144E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.266E+02	3.940E+02	4.130E+02	5.219E+02	1.020E+03	1.065E+04	8.669E+06	*7.634E+13	
Po-210	3.001E+03	1.915E+04	7.799E+05	3.360E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	1.037E+01	1.037E+01	1.039E+01	1.044E+01	1.063E+01	1.162E+01	1.534E+01	4.069E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	1.061 ñ 0.002	6.347E-02	3.939E+02	5.860E-02	4.266E+02
Po-210	1.000E+00	0.000E+00	8.330E-03	3.001E+03	8.330E-03	3.001E+03
Ra-226	1.000E+00	0.000E+00	2.411E+00	1.037E+01	2.411E+00	1.037E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	4.888E-02	4.727E-02	4.421E-02	3.496E-02	1.789E-02	1.713E-03	2.105E-06	1.368E-16	
Pb-210	Ra-226	1.000E+00	7.636E-04	2.256E-03	5.088E-03	1.357E-02	2.879E-02	4.016E-02	3.164E-02	1.193E-02	
Pb-210	äDOSE(j)		4.965E-02	4.953E-02	4.929E-02	4.853E-02	4.668E-02	4.187E-02	3.165E-02	1.193E-02	
Po-210	Pb-210	1.000E+00	9.721E-03	1.619E-02	1.633E-02	1.294E-02	6.622E-03	6.342E-04	7.791E-07	5.063E-17	
Po-210	Po-210	1.000E+00	8.330E-03	1.305E-03	3.206E-05	7.440E-11	5.936E-27	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	1.146E-04	5.489E-04	1.577E-03	4.718E-03	1.036E-02	1.460E-02	1.151E-02	4.339E-03	
Po-210	äDOSE(j)		1.817E-02	1.804E-02	1.794E-02	1.766E-02	1.698E-02	1.523E-02	1.151E-02	4.339E-03	
Ra-226	Ra-226	1.000E+00	2.410E+00	2.407E+00	2.400E+00	2.377E+00	2.312E+00	2.097E+00	1.587E+00	5.981E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.34 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

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Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
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Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1 SM TH-230.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Th-230	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	---	W1(4)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	---	VCZ
R013	Contaminated zone total porosity	---	TPCZ
R013	Contaminated zone field capacity	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	---	HCCZ
R013	Contaminated zone b parameter	---	BCZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
XX			
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00	>0 shows circular AREA. FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1.00 square meters	Th-230	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.231E-02	3.242E-02	3.264E-02	3.338E-02	3.547E-02	4.232E-02	5.832E-02	8.659E-02
M(t):	1.293E-03	1.297E-03	1.305E-03	1.335E-03	1.419E-03	1.693E-03	2.333E-03	3.464E-03

Maximum TDOSE(t): 8.659E-02 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-230

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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.
Th-230	8.722E-05	0.0027	3.222E-02	0.9972	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-06	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	8.722E-05	0.0027	3.222E-02	0.9972	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-06	0.0001

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.
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	3.231E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.231E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.966E-04	0.0061	3.222E-02	0.9938	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-06	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.966E-04	0.0061	3.222E-02	0.9938	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-06	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	3.242E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.242E-02	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 = 3.000E+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.
Th-230	4.148E-04	0.0127	3.222E-02	0.9871	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-06	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	4.148E-04	0.0127	3.222E-02	0.9871	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-06	0.0001

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.264E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.264E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-230

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.174E-03	0.0352	3.220E-02	0.9647	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-06	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.174E-03	0.0352	3.220E-02	0.9647	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-06	0.0001

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	3.338E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.338E-02	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 = 3.000E+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.
Th-230	3.299E-03	0.0930	3.216E-02	0.9068	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-06	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.299E-03	0.0930	3.216E-02	0.9068	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-06	0.0001

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.547E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.547E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.026E-02	0.2425	3.205E-02	0.7573	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.026E-02	0.2425	3.205E-02	0.7573	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-06	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	4.232E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.232E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1 SM TH-230.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.658E-02	0.4558	3.173E-02	0.5440	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-05	0.0002
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.658E-02	0.4558	3.173E-02	0.5440	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-05	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.832E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.832E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1 SM TH-230.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	5.625E-02	0.6496	3.032E-02	0.3501	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-05	0.0002
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	5.625E-02	0.6496	3.032E-02	0.3501	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-05	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.659E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	8.659E-02	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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Th-230	Th-230	1.000E+00	3.226E-02	3.226E-02	3.225E-02	3.223E-02	3.218E-02	3.199E-02	3.147E-02	2.970E-02
Th-230	Ra-226+D	1.000E+00	5.492E-05	1.647E-04	3.836E-04	1.145E-03	3.277E-03	1.026E-02	2.663E-02	5.638E-02
Th-230	Pb-210+D	1.000E+00	3.491E-09	2.420E-08	1.251E-07	1.035E-06	7.072E-06	4.260E-05	1.402E-04	3.194E-04
Th-230	Po-210	1.000E+00	6.931E-10	7.770E-09	5.540E-08	5.588E-07	4.084E-06	2.518E-05	8.332E-05	1.901E-04
Th-230	äDSR(j)		3.231E-02	3.242E-02	3.264E-02	3.338E-02	3.547E-02	4.232E-02	5.832E-02	8.659E-02
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii
The DSR includes contributions from associated (half-life ö 30 days) daughters.										

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	7.736E+02	7.711E+02	7.660E+02	7.490E+02	7.049E+02	5.907E+02	4.287E+02	2.887E+02	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	1.000E+00	1.000E+03	8.659E-02	2.887E+02	8.659E-02	2.887E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		3.226E-02	3.226E-02	3.225E-02	3.223E-02	3.218E-02	3.199E-02	3.147E-02	2.970E-02	
Ra-226	Th-230	1.000E+00		5.492E-05	1.647E-04	3.836E-04	1.145E-03	3.277E-03	1.026E-02	2.663E-02	5.638E-02	
Pb-210	Th-230	1.000E+00		3.491E-09	2.420E-08	1.251E-07	1.035E-06	7.072E-06	4.260E-05	1.402E-04	3.194E-04	
Po-210	Th-230	1.000E+00		6.931E-10	7.770E-09	5.540E-08	5.588E-07	4.084E-06	2.518E-05	8.332E-05	1.901E-04	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.												

RESCALC.EXE execution time = 1.09 seconds

Part I: Mixture Sums and Single Radionuclide Guidelines

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3 (4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	3.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00	>0 shows circular AREA. FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

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

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
AAAAAAAAAAAAAAAAAAAAAAAA	AAAAAAAAAAAAAAAAAAAAAAAA
Area: 3.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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)

AA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.654E-02	3.678E-02	3.726E-02	3.894E-02	4.364E-02	5.905E-02	9.509E-02	1.597E-01
M(t):	1.462E-03	1.471E-03	1.491E-03	1.558E-03	1.746E-03	2.362E-03	3.804E-03	6.389E-03

Maximum TDOSE(t): 1.597E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU1 Model AF 3 SM TH-230

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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-	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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	1.908E-04	0.0052	3.634E-02	0.9944	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-05	0.0004
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.908E-04	0.0052	3.634E-02	0.9944	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-05	0.0004

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-	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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
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	3.654E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.654E-02	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.
Th-230	4.347E-04	0.0118	3.633E-02	0.9878	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-05	0.0004
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	4.347E-04	0.0118	3.633E-02	0.9878	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-05	0.0004

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.
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	3.678E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.678E-02	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 = 3.000E+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.
Th-230	9.215E-04	0.0247	3.633E-02	0.9749	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-05	0.0004
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	9.215E-04	0.0247	3.633E-02	0.9749	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-05	0.0004

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.726E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.726E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3 SM TH-230

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.614E-03	0.0671	3.631E-02	0.9325	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-05	0.0004
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.614E-03	0.0671	3.631E-02	0.9325	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-05	0.0004

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	3.894E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.894E-02	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 = 3.000E+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.
Th-230	7.356E-03	0.1686	3.627E-02	0.8311	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-05	0.0003
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	7.356E-03	0.1686	3.627E-02	0.8311	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-05	0.0003

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	4.364E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	4.364E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Th-230	2.289E-02	0.3876	3.614E-02	0.6120	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.981E-05	0.0003
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.289E-02	0.3876	3.614E-02	0.6120	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.981E-05	0.0003

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
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	5.905E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.905E-02	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 = 3.000E+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.
Th-230	5.929E-02	0.6234	3.578E-02	0.3762	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-05	0.0003
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	5.929E-02	0.6234	3.578E-02	0.3762	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-05	0.0003

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	9.509E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	9.509E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.255E-01	0.7856	3.419E-02	0.2141	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.678E-05	0.0004
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.255E-01	0.7856	3.419E-02	0.2141	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.678E-05	0.0004

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.597E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.597E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Th-230	Th-230	1.000E+00	3.642E-02	3.641E-02	3.641E-02	3.639E-02	3.633E-02	3.612E-02	3.553E-02	3.353E-02
Th-230	Ra-226+D	1.000E+00	1.223E-04	3.667E-04	8.543E-04	2.550E-03	7.299E-03	2.285E-02	5.929E-02	1.256E-01
Th-230	Pb-210+D	1.000E+00	4.474E-09	3.101E-08	1.603E-07	1.326E-06	9.062E-06	5.459E-05	1.797E-04	4.093E-04
Th-230	Po-210	1.000E+00	8.042E-10	9.016E-09	6.427E-08	6.483E-07	4.739E-06	2.922E-05	9.667E-05	2.206E-04
Th-230	äDSR(j)		3.654E-02	3.678E-02	3.726E-02	3.894E-02	4.364E-02	5.905E-02	9.509E-02	1.597E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii
The DSR includes contributions from associated (half-life ö 30 days) daughters.										

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	6.842E+02	6.797E+02	6.709E+02	6.420E+02	5.729E+02	4.233E+02	2.629E+02	1.565E+02	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	1.000E+00	1.000E+03	1.597E-01	1.565E+02	1.597E-01	1.565E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		3.642E-02	3.641E-02	3.641E-02	3.639E-02	3.633E-02	3.612E-02	3.553E-02	3.353E-02	
Ra-226	Th-230	1.000E+00		1.223E-04	3.667E-04	8.543E-04	2.550E-03	7.299E-03	2.285E-02	5.929E-02	1.256E-01	
Pb-210	Th-230	1.000E+00		4.474E-09	3.101E-08	1.603E-07	1.326E-06	9.062E-06	5.459E-05	1.797E-04	4.093E-04	
Po-210	Th-230	1.000E+00		8.042E-10	9.016E-09	6.427E-08	6.483E-07	4.739E-06	2.922E-05	9.667E-05	2.206E-04	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.												

RESCALC.EXE execution time = 1.11 seconds

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Dose Conversion Factor (and Related) Parameter Summary ...	2
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Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3 (4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC (3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC (3,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC (4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (4,2)

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#For DCF1(xxx) only, factors are for infinite depth & area.  See ETFG table in Ground Pathway of Detailed Report.
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*Base Case means Default.Lib w/o Associate Nuclide contributions.

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
XX			
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00	>0 shows circular AREA. FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	10.00 square meters	Th-230	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.186E-02	4.236E-02	4.337E-02	4.686E-02	5.667E-02	8.882E-02	1.641E-01	2.998E-01
M(t):	1.674E-03	1.694E-03	1.735E-03	1.875E-03	2.267E-03	3.553E-03	6.563E-03	1.199E-02

Maximum TDOSE(t): 2.998E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	3.931E-04	0.0094	4.142E-02	0.9895	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-05	0.0011
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.931E-04	0.0094	4.142E-02	0.9895	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-05	0.0011

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	4.186E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	4.186E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	8.999E-04	0.0212	4.141E-02	0.9777	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-05	0.0011
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	8.999E-04	0.0212	4.141E-02	0.9777	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-05	0.0011

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	4.236E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	4.236E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-230

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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 = 3.000E+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.
Th-230	1.911E-03	0.0441	4.141E-02	0.9549	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-05	0.0011
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.911E-03	0.0441	4.141E-02	0.9549	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-05	0.0011

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	4.337E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	4.337E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-230

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	5.428E-03	0.1158	4.139E-02	0.8832	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-05	0.0010
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	5.428E-03	0.1158	4.139E-02	0.8832	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-05	0.0010

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	4.686E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	4.686E-02	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 = 3.000E+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.
Th-230	1.528E-02	0.2696	4.134E-02	0.7295	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-05	0.0009
Total	1.528E-02	0.2696	4.134E-02	0.7295	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-05	0.0009

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	5.667E-02	1.0000
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	5.667E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-230

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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.
Th-230	4.756E-02	0.5354	4.120E-02	0.4638	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-05	0.0007
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.756E-02	0.5354	4.120E-02	0.4638	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-05	0.0007

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.
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	8.882E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	8.882E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-230

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.232E-01	0.7508	4.078E-02	0.2486	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-04	0.0007
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.232E-01	0.7508	4.078E-02	0.2486	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-04	0.0007

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.641E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.641E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.607E-01	0.8694	3.897E-02	0.1300	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-04	0.0006
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.607E-01	0.8694	3.897E-02	0.1300	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-04	0.0006

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	2.998E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	2.998E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Th-230	Th-230	1.000E+00	4.160E-02	4.160E-02	4.159E-02	4.157E-02	4.150E-02	4.126E-02	4.058E-02	3.830E-02
Th-230	Ra-226+D	1.000E+00	2.539E-04	7.613E-04	1.774E-03	5.294E-03	1.515E-02	4.745E-02	1.231E-01	2.607E-01
Th-230	Pb-210+D	1.000E+00	6.423E-09	4.452E-08	2.301E-07	1.903E-06	1.301E-05	7.837E-05	2.579E-04	5.877E-04
Th-230	Po-210	1.000E+00	9.947E-10	1.115E-08	7.950E-08	8.019E-07	5.861E-06	3.614E-05	1.196E-04	2.728E-04
Th-230	äDSR(j)		4.186E-02	4.236E-02	4.337E-02	4.686E-02	5.667E-02	8.882E-02	1.641E-01	2.998E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii
The DSR includes contributions from associated (half-life ö 30 days) daughters.										

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	5.973E+02	5.902E+02	5.765E+02	5.335E+02	4.411E+02	2.815E+02	1.524E+02	8.338E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	1.000E+00	1.000E+03	2.998E-01	8.338E+01	2.998E-01	8.338E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00	4.160E-02	4.160E-02	4.159E-02	4.157E-02	4.150E-02	4.126E-02	4.058E-02	3.830E-02		
Ra-226	Th-230	1.000E+00	2.539E-04	7.613E-04	1.774E-03	5.294E-03	1.515E-02	4.745E-02	1.231E-01	2.607E-01		
Pb-210	Th-230	1.000E+00	6.423E-09	4.452E-08	2.301E-07	1.903E-06	1.301E-05	7.837E-05	2.579E-04	5.877E-04		
Po-210	Th-230	1.000E+00	9.947E-10	1.115E-08	7.950E-08	8.019E-07	5.861E-06	3.614E-05	1.196E-04	2.728E-04		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01		
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01		
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01		
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.												

RESCALC.EXE execution time = 1.08 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

Dose Conversion Factor (and Related) Parameter Summary ...	2
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Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

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

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

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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)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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
=====					

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00 >0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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 Harshaw OUI Model AF 30 SM TH-230

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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	suppressed

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	30.00 square meters	Th-230	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.731E-02	4.802E-02	4.941E-02	5.428E-02	6.792E-02	1.126E-01	2.174E-01	4.066E-01
M(t):	1.893E-03	1.921E-03	1.977E-03	2.171E-03	2.717E-03	4.506E-03	8.694E-03	1.626E-02

Maximum TDOSE(t): 4.066E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

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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.
Th-230	5.407E-04	0.0114	4.664E-02	0.9857	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-04	0.0029
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.407E-04	0.0114	4.664E-02	0.9857	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-04	0.0029

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.
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	4.731E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.731E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

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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.
Th-230	1.245E-03	0.0259	4.663E-02	0.9712	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-04	0.0029
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.245E-03	0.0259	4.663E-02	0.9712	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-04	0.0029

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.
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	4.802E-02	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	4.802E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM TH-230.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 = 3.000E+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.
Th-230	2.650E-03	0.0536	4.663E-02	0.9436	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-04	0.0028
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.650E-03	0.0536	4.663E-02	0.9436	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-04	0.0028

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	4.941E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.941E-02	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+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.
Th-230	7.536E-03	0.1388	4.661E-02	0.8586	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-04	0.0026
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	7.536E-03	0.1388	4.661E-02	0.8586	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-04	0.0026

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+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.
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	5.428E-02	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	5.428E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

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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 = 3.000E+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.
Th-230	2.122E-02	0.3124	4.655E-02	0.6854	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-04	0.0022
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.122E-02	0.3124	4.655E-02	0.6854	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-04	0.0022

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	6.792E-02	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.792E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

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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.
Th-230	6.606E-02	0.5864	4.639E-02	0.4118	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.981E-04	0.0018
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	6.606E-02	0.5864	4.639E-02	0.4118	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.981E-04	0.0018

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.
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	1.126E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.126E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

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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 = 3.000E+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.
Th-230	1.711E-01	0.7872	4.592E-02	0.2113	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-04	0.0015
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.711E-01	0.7872	4.592E-02	0.2113	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-04	0.0015

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	2.174E-01	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.174E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-230

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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.
Th-230	3.621E-01	0.8907	4.388E-02	0.1079	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.678E-04	0.0014
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.621E-01	0.8907	4.388E-02	0.1079	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.678E-04	0.0014

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.
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	4.066E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.066E-01	1.0000

Sum of all water independent and dependent pathways.

Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr) / (pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
Th-230	Th-230	1.000E+00	4.696E-02	4.696E-02	4.695E-02	4.692E-02	4.684E-02	4.657E-02	4.581E-02	4.323E-02	
Th-230	Ra-226+D	1.000E+00	3.527E-04	1.058E-03	2.464E-03	7.354E-03	2.105E-02	6.591E-02	1.710E-01	3.621E-01	
Th-230	Pb-210+D	1.000E+00	9.443E-09	6.545E-08	3.383E-07	2.798E-06	1.913E-05	1.152E-04	3.792E-04	8.640E-04	
Th-230	Po-210	1.000E+00	1.338E-09	1.500E-08	1.069E-07	1.079E-06	7.885E-06	4.861E-05	1.609E-04	3.670E-04	
Th-230	äDSR (j)		4.731E-02	4.802E-02	4.941E-02	5.428E-02	6.792E-02	1.126E-01	2.174E-01	4.066E-01	
iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	
The DSR includes contributions from associated (half-life ö 30 days) daughters.											

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

[illegible]

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
Th-230	1.000E+00	1.000E+03	4.066E-01	6.149E+01	4.066E-01	6.149E+01
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		4.696E-02	4.696E-02	4.695E-02	4.692E-02	4.684E-02	4.657E-02	4.581E-02	4.323E-02
Ra-226	Th-230	1.000E+00		3.527E-04	1.058E-03	2.464E-03	7.354E-03	2.105E-02	6.591E-02	1.710E-01	3.621E-01
Pb-210	Th-230	1.000E+00		9.443E-09	6.545E-08	3.383E-07	2.798E-06	1.913E-05	1.152E-04	3.792E-04	8.640E-04
Po-210	Th-230	1.000E+00		1.338E-09	1.500E-08	1.069E-07	1.079E-06	7.885E-06	4.861E-05	1.609E-04	3.670E-04
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.											

RESCALC.EXE execution time = 1.03 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC (3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC (3,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC (4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (4,2)

#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.

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Th-230	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	---	W1(4)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENS CZ
R013	Contaminated zone erosion rate (m/yr)	---	V CZ
R013	Contaminated zone total porosity	---	TP CZ
R013	Contaminated zone field capacity	---	F CCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	---	H CCZ
R013	Contaminated zone b parameter	---	B CZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
XXX			
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00 >0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

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

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	100.00 square meters	Th-230	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

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)

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t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.419E-02	5.505E-02	5.678E-02	6.280E-02	7.969E-02	1.351E-01	2.648E-01	4.994E-01
M(t):	2.167E-03	2.202E-03	2.271E-03	2.512E-03	3.188E-03	5.403E-03	1.059E-02	1.998E-02

Maximum TDOSE(t): 4.994E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	6.644E-04	0.0123	5.307E-02	0.9793	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-04	0.0084
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	6.644E-04	0.0123	5.307E-02	0.9793	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-04	0.0084

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.419E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.419E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.535E-03	0.0279	5.306E-02	0.9638	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-04	0.0083
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.535E-03	0.0279	5.306E-02	0.9638	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-04	0.0083

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.505E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.505E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-230

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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 = 3.000E+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.
Th-230	3.271E-03	0.0576	5.305E-02	0.9343	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-04	0.0081
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.271E-03	0.0576	5.305E-02	0.9343	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-04	0.0081

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	5.678E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.678E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-230

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	9.310E-03	0.1482	5.303E-02	0.8444	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-04	0.0074
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	9.310E-03	0.1482	5.303E-02	0.8444	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-04	0.0074

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.280E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	6.280E-02	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 = 3.000E+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.
Th-230	2.622E-02	0.3291	5.297E-02	0.6647	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-04	0.0062
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.622E-02	0.3291	5.297E-02	0.6647	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-04	0.0062

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	7.969E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	7.969E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-230

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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.
Th-230	8.164E-02	0.6044	5.279E-02	0.3908	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-04	0.0049
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	8.164E-02	0.6044	5.279E-02	0.3908	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-04	0.0049

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.
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	1.351E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.351E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-230

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.115E-01	0.7986	5.225E-02	0.1973	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-03	0.0042
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.115E-01	0.7986	5.225E-02	0.1973	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-03	0.0042

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	2.648E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	2.648E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	4.476E-01	0.8962	4.993E-02	0.1000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-03	0.0038
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.476E-01	0.8962	4.993E-02	0.1000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-03	0.0038

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	4.994E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.994E-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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	5.375E-02	5.375E-02	5.374E-02	5.371E-02	5.362E-02	5.331E-02	5.243E-02	4.948E-02
Th-230	Ra-226+D	1.000E+00	4.361E-04	1.307E-03	3.046E-03	9.091E-03	2.602E-02	8.148E-02	2.114E-01	4.477E-01
Th-230	Pb-210+D	1.000E+00	1.746E-08	1.210E-07	6.254E-07	5.173E-06	3.536E-05	2.130E-04	7.011E-04	1.597E-03
Th-230	Po-210	1.000E+00	2.286E-09	2.563E-08	1.827E-07	1.843E-06	1.347E-05	8.305E-05	2.748E-04	6.269E-04
Th-230	äDSR(j)		5.419E-02	5.505E-02	5.678E-02	6.280E-02	7.969E-02	1.351E-01	2.648E-01	4.994E-01
The DSR includes contributions from associated (half-life 6 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	4.614E+02	4.541E+02	4.403E+02	3.981E+02	3.137E+02	1.851E+02	9.441E+01	5.006E+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 = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin) (pCi/g)	DSR(i,tmax) (pCi/g)	G(i,tmin) (pCi/g)	G(i,tmax) (pCi/g)
Th-230	1.000E+00	1.000E+03	4.994E-01	5.006E+01	4.994E-01	5.006E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		5.375E-02	5.375E-02	5.374E-02	5.371E-02	5.362E-02	5.331E-02	5.243E-02	4.948E-02	
Ra-226	Th-230	1.000E+00		4.361E-04	1.307E-03	3.046E-03	9.091E-03	2.602E-02	8.148E-02	2.114E-01	4.477E-01	
Pb-210	Th-230	1.000E+00		1.746E-08	1.210E-07	6.254E-07	5.173E-06	3.536E-05	2.130E-04	7.011E-04	1.597E-03	
Po-210	Th-230	1.000E+00		2.286E-09	2.563E-08	1.827E-07	1.843E-06	1.347E-05	8.305E-05	2.748E-04	6.269E-04	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.												

RESCALC.EXE execution time = 1.15 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Th-230	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	---	W1(4)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENS CZ
R013	Contaminated zone erosion rate (m/yr)	---	V CZ
R013	Contaminated zone total porosity	---	TP CZ
R013	Contaminated zone field capacity	---	F CCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	---	H CCZ
R013	Contaminated zone b parameter	---	B CZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW

	User	Used by RESRAD	Parameter
Menu Parameter	Input	Default (If different from user input)	Name
XX			
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 Th-230			
R016 Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	DCNUCC(4)
R016 Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	DCNUCU(4,1
R016 Saturated zone (cm**3/g)	not used	6.000E+04	DCNUCS(4)
R016 Leach rate (/yr)	0.000E+00	0.000E+00	ALEACH(4)
R016 Solubility constant	0.000E+00	0.000E+00	SOLUBK(4)
R016 Distribution coefficients for daughter Pb-210			
R016 Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	DCNUCC(1)
R016 Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	DCNUCU(1,1
R016 Saturated zone (cm**3/g)	not used	1.000E+02	DCNUCS(1)
R016 Leach rate (/yr)	0.000E+00	0.000E+00	ALEACH(1)
R016 Solubility constant	0.000E+00	0.000E+00	SOLUBK(1)
R016 Distribution coefficients for daughter Po-210			
R016 Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	DCNUCC(2)
R016 Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	DCNUCU(2,1
R016 Saturated zone (cm**3/g)	not used	1.000E+01	DCNUCS(2)
R016 Leach rate (/yr)	0.000E+00	0.000E+00	ALEACH(2)
R016 Solubility constant	0.000E+00	0.000E+00	SOLUBK(2)
R016 Distribution coefficients for daughter Ra-226			
R016 Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	DCNUCC(3)
R016 Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	DCNUCU(3,1
R016 Saturated zone (cm**3/g)	not used	7.000E+01	DCNUCS(3)
R016 Leach rate (/yr)	0.000E+00	0.000E+00	ALEACH(3)
R016 Solubility constant	0.000E+00	0.000E+00	SOLUBK(3)
R017 Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	INHALR
R017 Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	FOTD
R017 Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA. FS

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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

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)	5.000E-02	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 Harshaw OU1 Model AF 300 SM TH-230

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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	suppressed

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	300.00 square meters	Th-230	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.173E-02	6.267E-02	6.455E-02	7.108E-02	8.944E-02	1.498E-01	2.912E-01	5.468E-01
M(t):	2.469E-03	2.507E-03	2.582E-03	2.843E-03	3.577E-03	5.991E-03	1.165E-02	2.187E-02

Maximum TDOSE(t): 5.468E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	7.165E-04	0.0116	5.964E-02	0.9662	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-03	0.0222
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	7.165E-04	0.0116	5.964E-02	0.9662	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.369E-03	0.0222

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.173E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.173E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.659E-03	0.0265	5.964E-02	0.9517	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-03	0.0219
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.659E-03	0.0265	5.964E-02	0.9517	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.370E-03	0.0219

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.267E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	6.267E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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 = 3.000E+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.
Th-230	3.541E-03	0.0549	5.963E-02	0.9238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-03	0.0213
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.541E-03	0.0549	5.963E-02	0.9238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-03	0.0213

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	6.455E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	6.455E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.008E-02	0.1419	5.961E-02	0.8385	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-03	0.0196
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.008E-02	0.1419	5.961E-02	0.8385	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.393E-03	0.0196

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	7.108E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	7.108E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.841E-02	0.3177	5.954E-02	0.6657	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-03	0.0166
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.841E-02	0.3177	5.954E-02	0.6657	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.488E-03	0.0166

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.944E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	8.944E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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.
Th-230	8.846E-02	0.5906	5.933E-02	0.3961	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.981E-03	0.0132
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	8.846E-02	0.5906	5.933E-02	0.3961	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.981E-03	0.0132

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.
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	1.498E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.498E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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 = 3.000E+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.
Th-230	2.291E-01	0.7870	5.873E-02	0.2017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-03	0.0113
íííííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí
Total	2.291E-01	0.7870	5.873E-02	0.2017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.298E-03	0.0113

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	2.912E-01	1.0000
íííííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí
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	2.912E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-230

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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.
Th-230	4.850E-01	0.8870	5.612E-02	0.1026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.678E-03	0.0104
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	4.850E-01	0.8870	5.612E-02	0.1026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.678E-03	0.0104

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.
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	5.468E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.468E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Th-230	Th-230	1.000E+00	6.126E-02	6.125E-02	6.124E-02	6.121E-02	6.111E-02	6.075E-02	5.976E-02	5.640E-02
Th-230	Ra-226+D	1.000E+00	4.730E-04	1.418E-03	3.304E-03	9.861E-03	2.823E-02	8.838E-02	2.293E-01	4.856E-01
Th-230	Pb-210+D	1.000E+00	3.817E-08	2.645E-07	1.367E-06	1.131E-05	7.731E-05	4.657E-04	1.533E-03	3.492E-03
Th-230	Po-210	1.000E+00	4.742E-09	5.316E-08	3.790E-07	3.823E-06	2.794E-05	1.723E-04	5.700E-04	1.301E-03
Th-230	äDSR(j)		6.173E-02	6.267E-02	6.455E-02	7.108E-02	8.944E-02	1.498E-01	2.912E-01	5.468E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii
The DSR includes contributions from associated (half-life ö 30 days) daughters.										

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	4.050E+02	3.989E+02	3.873E+02	3.517E+02	2.795E+02	1.669E+02	8.586E+01	4.572E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	1.000E+00	1.000E+03	5.468E-01	4.572E+01	5.468E-01	4.572E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00	6.126E-02	6.125E-02	6.124E-02	6.121E-02	6.111E-02	6.075E-02	5.976E-02	5.640E-02		
Ra-226	Th-230	1.000E+00	4.730E-04	1.418E-03	3.304E-03	9.861E-03	2.823E-02	8.838E-02	2.293E-01	4.856E-01		
Pb-210	Th-230	1.000E+00	3.817E-08	2.645E-07	1.367E-06	1.131E-05	7.731E-05	4.657E-04	1.533E-03	3.492E-03		
Po-210	Th-230	1.000E+00	4.742E-09	5.316E-08	3.790E-07	3.823E-06	2.794E-05	1.723E-04	5.700E-04	1.301E-03		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01		
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01		
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01		
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.												

RESCALC.EXE execution time = 1.10 seconds

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Th-230	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	---	W1(4)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENS CZ
R013	Contaminated zone erosion rate (m/yr)	---	V CZ
R013	Contaminated zone total porosity	---	TP CZ
R013	Contaminated zone field capacity	---	F CC Z
R013	Contaminated zone hydraulic conductivity (m/yr)	---	H CC Z
R013	Contaminated zone b parameter	---	B CZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00	>0 shows circular AREA. FS

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-230

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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

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)	5.000E-02	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 Harshaw OU1 Model AF 1000 SM TH-230

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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	suppressed

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1000.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	7.303E-02	7.402E-02	7.599E-02	8.289E-02	1.023E-01	1.667E-01	3.179E-01	5.912E-01
M(t):	2.921E-03	2.961E-03	3.040E-03	3.315E-03	4.094E-03	6.669E-03	1.272E-02	2.365E-02

Maximum TDOSE(t): 5.912E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	7.479E-04	0.0102	6.772E-02	0.9273	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-03	0.0625
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	7.479E-04	0.0102	6.772E-02	0.9273	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-03	0.0625

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	7.303E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	7.303E-02	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.
Th-230	1.737E-03	0.0235	6.771E-02	0.9148	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-03	0.0617
Total	1.737E-03	0.0235	6.771E-02	0.9148	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-03	0.0617

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.
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	7.402E-02	1.0000
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	7.402E-02	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 = 3.000E+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.
Th-230	3.710E-03	0.0488	6.770E-02	0.8909	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0603
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.710E-03	0.0488	6.770E-02	0.8909	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0603

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	7.599E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	7.599E-02	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+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.
Th-230	1.057E-02	0.1275	6.767E-02	0.8164	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-03	0.0560
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.057E-02	0.1275	6.767E-02	0.8164	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-03	0.0560

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+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.
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	8.289E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	8.289E-02	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 = 3.000E+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.
Th-230	2.979E-02	0.2911	6.759E-02	0.6604	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-03	0.0485
Total	2.979E-02	0.2911	6.759E-02	0.6604	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-03	0.0485

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.023E-01	1.0000
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	1.023E-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+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.
Th-230	9.276E-02	0.5564	6.736E-02	0.4040	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-03	0.0396
Total	9.276E-02	0.5564	6.736E-02	0.4040	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-03	0.0396

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.
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	1.667E-01	1.0000
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	1.667E-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 = 3.000E+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.
Th-230	2.403E-01	0.7557	6.667E-02	0.2097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-02	0.0346
Total	2.403E-01	0.7557	6.667E-02	0.2097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-02	0.0346

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.179E-01	1.0000
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	3.179E-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.
Th-230	5.085E-01	0.8602	6.371E-02	0.1078	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-02	0.0320
Total	5.085E-01	0.8602	6.371E-02	0.1078	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-02	0.0320

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.
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	5.912E-01	1.0000
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	5.912E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Th-230	Th-230	1.000E+00	7.253E-02	7.252E-02	7.251E-02	7.247E-02	7.235E-02	7.193E-02	7.075E-02	6.677E-02
Th-230	Ra-226+D	1.000E+00	4.976E-04	1.492E-03	3.476E-03	1.038E-02	2.970E-02	9.299E-02	2.413E-01	5.109E-01
Th-230	Pb-210+D	1.000E+00	1.087E-07	7.535E-07	3.895E-06	3.222E-05	2.202E-04	1.327E-03	4.366E-03	9.947E-03
Th-230	Po-210	1.000E+00	1.302E-08	1.460E-07	1.041E-06	1.050E-05	7.673E-05	4.730E-04	1.565E-03	3.571E-03
Th-230	äDSR(j)		7.303E-02	7.402E-02	7.599E-02	8.289E-02	1.023E-01	1.667E-01	3.179E-01	5.912E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii
The DSR includes contributions from associated (half-life ö 30 days) daughters.										

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	3.423E+02	3.378E+02	3.290E+02	3.016E+02	2.443E+02	1.500E+02	7.863E+01	4.229E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	1.000E+00	1.000E+03	5.912E-01	4.229E+01	5.912E-01	4.229E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		7.253E-02	7.252E-02	7.251E-02	7.247E-02	7.235E-02	7.193E-02	7.075E-02	6.677E-02
Ra-226	Th-230	1.000E+00		4.976E-04	1.492E-03	3.476E-03	1.038E-02	2.970E-02	9.299E-02	2.413E-01	5.109E-01
Pb-210	Th-230	1.000E+00		1.087E-07	7.535E-07	3.895E-06	3.222E-05	2.202E-04	1.327E-03	4.366E-03	9.947E-03
Po-210	Th-230	1.000E+00		1.302E-08	1.460E-07	1.041E-06	1.050E-05	7.673E-05	4.730E-04	1.565E-03	3.571E-03
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.02 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Th-230	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	---	W1(4)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENS CZ
R013	Contaminated zone erosion rate (m/yr)	---	V CZ
R013	Contaminated zone total porosity	---	TP CZ
R013	Contaminated zone field capacity	---	F CCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	---	H CCZ
R013	Contaminated zone b parameter	---	B CZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00 >0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-230

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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

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)	5.000E-02	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 Harshaw OU1 Model AF 3000 SM TH-230

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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	suppressed

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3000.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	8.127E-02	8.227E-02	8.429E-02	9.132E-02	1.112E-01	1.768E-01	3.310E-01	6.094E-01
M(t):	3.251E-03	3.291E-03	3.372E-03	3.653E-03	4.447E-03	7.073E-03	1.324E-02	2.438E-02

Maximum TDOSE(t): 6.094E-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.
Th-230	7.627E-04	0.0094	7.594E-02	0.9345	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-03	0.0561
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Total	7.627E-04	0.0094	7.594E-02	0.9345	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-03	0.0561

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.
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	8.127E-02	1.0000
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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	8.127E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-230

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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.
Th-230	1.772E-03	0.0215	7.594E-02	0.9229	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-03	0.0555
Total	1.772E-03	0.0215	7.594E-02	0.9229	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-03	0.0555

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.
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	8.227E-02	1.0000
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	8.227E-02	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 = 3.000E+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.
Th-230	3.786E-03	0.0449	7.592E-02	0.9007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0543
Total	3.786E-03	0.0449	7.592E-02	0.9007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0543

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.429E-02	1.0000
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	8.429E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-230

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.079E-02	0.1181	7.589E-02	0.8310	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-03	0.0509
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.079E-02	0.1181	7.589E-02	0.8310	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-03	0.0509

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	9.132E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	9.132E-02	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 = 3.000E+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.
Th-230	3.041E-02	0.2735	7.580E-02	0.6819	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-03	0.0446
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.041E-02	0.2735	7.580E-02	0.6819	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-03	0.0446

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.112E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.112E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-230

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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.
Th-230	9.467E-02	0.5354	7.554E-02	0.4272	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-03	0.0373
Total	9.467E-02	0.5354	7.554E-02	0.4272	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-03	0.0373

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.
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	1.768E-01	1.0000
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	1.768E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-230

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.452E-01	0.7409	7.477E-02	0.2259	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-02	0.0332
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.452E-01	0.7409	7.477E-02	0.2259	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-02	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 = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	3.310E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.310E-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.
Th-230	5.190E-01	0.8517	7.145E-02	0.1172	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-02	0.0311
Total	5.190E-01	0.8517	7.145E-02	0.1172	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-02	0.0311

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.
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	6.094E-01	1.0000
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	6.094E-01	1.0000

Sum of all water independent and dependent pathways.

Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr) / (pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
Th-230	Th-230	1.000E+00	8.076E-02	8.075E-02	8.074E-02	8.069E-02	8.056E-02	8.009E-02	7.878E-02	7.435E-02	
Th-230	Ra-226D	1.000E+00	5.079E-04	1.523E-03	3.548E-03	1.059E-02	3.031E-02	9.491E-02	2.462E-01	5.214E-01	
Th-230	Pb-210D	1.000E+00	1.096E-07	7.593E-07	3.925E-06	3.246E-05	2.219E-04	1.337E-03	4.400E-03	1.002E-02	
Th-230	Po-210	1.000E+00	1.319E-08	1.479E-07	1.055E-06	1.064E-05	7.775E-05	4.793E-04	1.586E-03	3.619E-03	
Th-230	αDSR(j)		8.127E-02	8.227E-02	8.429E-02	9.132E-02	1.112E-01	1.768E-01	3.310E-01	6.094E-01	
iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	
The DSR includes contributions from associated (half-life > 30 days) daughters.											

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	3.076E+02	3.039E+02	2.966E+02	2.738E+02	2.249E+02	1.414E+02	7.553E+01	4.102E+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 = 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)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
Th-230	1.000E+00	1.000E+03	6.094E-01	4.102E+01	6.094E-01	4.102E+01
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		8.076E-02	8.075E-02	8.074E-02	8.069E-02	8.056E-02	8.009E-02	7.878E-02	7.435E-02	
Ra-226	Th-230	1.000E+00		5.079E-04	1.523E-03	3.548E-03	1.059E-02	3.031E-02	9.491E-02	2.462E-01	5.214E-01	
Pb-210	Th-230	1.000E+00		1.096E-07	7.593E-07	3.925E-06	3.246E-05	2.219E-04	1.337E-03	4.400E-03	1.002E-02	
Po-210	Th-230	1.000E+00		1.319E-08	1.479E-07	1.055E-06	1.064E-05	7.775E-05	4.793E-04	1.586E-03	3.619E-03	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.												

RESCALC.EXE execution time = 1.06 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Summary : RESRAD Harshaw OU1 Model AF 10000 SM TH-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
	D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
	D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)
	D-5				
	D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
	D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(4,2)
#####					
#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.					

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	---	AREA
R011	Thickness of contaminated zone (m)	---	THICK0
R011	Fraction of contamination that is submerged	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	---	BRDL
R011	Time since placement of material (yr)	---	TI
R011	Times for calculations (yr)	---	T(2)
R011	Times for calculations (yr)	---	T(3)
R011	Times for calculations (yr)	---	T(4)
R011	Times for calculations (yr)	---	T(5)
R011	Times for calculations (yr)	---	T(6)
R011	Times for calculations (yr)	---	T(7)
R011	Times for calculations (yr)	---	T(8)
R011	Times for calculations (yr)	---	T(9)
R011	Times for calculations (yr)	---	T(10)
R012	Initial principal radionuclide (pCi/g): Th-230	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	---	W1(4)
R013	Cover depth (m)	---	COVER0
R013	Density of cover material (g/cm**3)	---	DENSCV
R013	Cover depth erosion rate (m/yr)	---	VCV
R013	Density of contaminated zone (g/cm**3)	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	---	VCZ
R013	Contaminated zone total porosity	---	TPCZ
R013	Contaminated zone field capacity	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	---	HCCZ
R013	Contaminated zone b parameter	---	BCZ
R013	Average annual wind speed (m/sec)	---	WIND
R013	Humidity in air (g/m**3)	---	HUMID
R013	Evapotranspiration coefficient	---	EVAPTR
R013	Precipitation (m/yr)	---	PRECIP
R013	Irrigation (m/yr)	---	RI
R013	Irrigation mode	---	IDITCH
R013	Runoff coefficient	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	---	WAREA
R013	Accuracy for water/soil computations	---	EPS
R014	Density of saturated zone (g/cm**3)	---	DENSAQ
R014	Saturated zone total porosity	---	TPSZ
R014	Saturated zone effective porosity	---	EPSZ
R014	Saturated zone field capacity	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	---	HCSZ
R014	Saturated zone hydraulic gradient	---	HGWT
R014	Saturated zone b parameter	---	BSZ
R014	Water table drop rate (m/yr)	---	VWT
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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 Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03 6.000E+04	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	not used 6.000E+04	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	not used 6.000E+04	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02 1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used 1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01 1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used 1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used 1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02 7.000E+01	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used 7.000E+01	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	not used 7.000E+01	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00 0.000E+00 9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00 0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04 8.400E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04 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	4.000E-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)	2.280E-01 2.500E-01	FOTD
R017	Shape factor flag, external gamma	1.000E+00 1.000E+00 >0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 10000 SM TH-230

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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

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)	5.000E-02	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 Harshaw OU1 Model AF 10000 SM TH-230

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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	suppressed

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
AAAAAAAAAAAAAAAAAAAAAAAAA	AAAAAAAAAAAAAAAAAAAAAAAAA
Area: 10000.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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)

AAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	9.132E-02	9.236E-02	9.443E-02	1.017E-01	1.220E-01	1.895E-01	3.478E-01	6.335E-01
M(t):	3.653E-03	3.694E-03	3.777E-03	4.066E-03	4.882E-03	7.579E-03	1.391E-02	2.534E-02

Maximum TDOSE(t): 6.335E-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.
Th-230	7.836E-04	0.0086	8.598E-02	0.9415	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-03	0.0500
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	7.836E-04	0.0086	8.598E-02	0.9415	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.563E-03	0.0500

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.
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	9.132E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	9.132E-02	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.
Th-230	1.821E-03	0.0197	8.597E-02	0.9308	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-03	0.0495
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.821E-03	0.0197	8.597E-02	0.9308	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.568E-03	0.0495

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.
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	9.236E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	9.236E-02	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 = 3.000E+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.
Th-230	3.892E-03	0.0412	8.596E-02	0.9103	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0485
Total	3.892E-03	0.0412	8.596E-02	0.9103	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.580E-03	0.0485

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	9.443E-02	1.0000
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	9.443E-02	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+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.
Th-230	1.109E-02	0.1091	8.592E-02	0.8452	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-03	0.0457
Total	1.109E-02	0.1091	8.592E-02	0.8452	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.645E-03	0.0457

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+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.
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	1.017E-01	1.0000
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	1.017E-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 = 3.000E+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.
Th-230	3.126E-02	0.2561	8.582E-02	0.7032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-03	0.0406
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.126E-02	0.2561	8.582E-02	0.7032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.961E-03	0.0406

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.220E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.220E-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+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.
Th-230	9.734E-02	0.5137	8.553E-02	0.4514	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-03	0.0348
íííííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí
Total	9.734E-02	0.5137	8.553E-02	0.4514	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.603E-03	0.0348

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.
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	1.895E-01	1.0000
íííííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí	íííííííííí	íííííí
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	1.895E-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 = 3.000E+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.
Th-230	2.521E-01	0.7250	8.465E-02	0.2434	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-02	0.0316
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.521E-01	0.7250	8.465E-02	0.2434	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.099E-02	0.0316

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.478E-01	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.478E-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-	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.
Th-230	5.337E-01	0.8424	8.090E-02	0.1277	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-02	0.0299
Total	5.337E-01	0.8424	8.090E-02	0.1277	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.893E-02	0.0299

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-	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.
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	6.335E-01	1.0000
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	6.335E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Th-230	Th-230	1.000E+00	9.080E-02	9.080E-02	9.078E-02	9.073E-02	9.058E-02	9.005E-02	8.858E-02	8.360E-02
Th-230	Ra-226+D	1.000E+00	5.222E-04	1.566E-03	3.648E-03	1.089E-02	3.116E-02	9.758E-02	2.532E-01	5.361E-01
Th-230	Pb-210+D	1.000E+00	1.106E-07	7.664E-07	3.962E-06	3.277E-05	2.240E-04	1.349E-03	4.441E-03	1.012E-02
Th-230	Po-210	1.000E+00	1.341E-08	1.503E-07	1.072E-06	1.081E-05	7.900E-05	4.871E-04	1.612E-03	3.677E-03
Th-230	äDSR(j)		9.132E-02	9.236E-02	9.443E-02	1.017E-01	1.220E-01	1.895E-01	3.478E-01	6.335E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii
The DSR includes contributions from associated (half-life ó 30 days) daughters.										

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	2.737E+02	2.707E+02	2.647E+02	2.459E+02	2.048E+02	1.319E+02	7.188E+01	3.946E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Th-230	1.000E+00	1.000E+03	6.335E-01	3.946E+01	6.335E-01	3.946E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Th-230	Th-230	1.000E+00	9.080E-02	9.080E-02	9.078E-02	9.073E-02	9.058E-02	9.005E-02	8.858E-02	8.360E-02	
Ra-226	Th-230	1.000E+00	5.222E-04	1.566E-03	3.648E-03	1.089E-02	3.116E-02	9.758E-02	2.532E-01	5.361E-01	
Pb-210	Th-230	1.000E+00	1.106E-07	7.664E-07	3.962E-06	3.277E-05	2.240E-04	1.349E-03	4.441E-03	1.012E-02	
Po-210	Th-230	1.000E+00	1.341E-08	1.503E-07	1.072E-06	1.081E-05	7.900E-05	4.871E-04	1.612E-03	3.677E-03	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	
THF(i) is the thread fraction of the parent nuclide.											

RESCALC.EXE execution time = 1.08 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU1 Model AF 1 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1 SM TH-232.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
=====				
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
=====				
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
=====				
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
=====				
D-34	Food transfer factors:			
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
=====				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
=====				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
=====				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
=====				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
=====				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

=====

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	1.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	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)
AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.584E-01	5.582E-01	5.577E-01	5.563E-01	5.545E-01	5.515E-01	5.435E-01	5.161E-01
M(t):	2.234E-02	2.233E-02	2.231E-02	2.225E-02	2.218E-02	2.206E-02	2.174E-02	2.065E-02

Maximum TDOSE(t): 5.584E-01 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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.634E-01	0.2926	5.750E-03	0.0103	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-05	0.0000
Th-228	1.889E-01	0.3382	2.864E-02	0.0513	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.644E-06	0.0000
Th-232	9.379E-03	0.0168	1.624E-01	0.2907	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-05	0.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.617E-01	0.6476	1.967E-01	0.3523	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.144E-05	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.692E-01	0.3030
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	2.175E-01	0.3895
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	1.718E-01	0.3076
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.584E-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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.986E-01	0.3557	1.326E-02	0.0237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E-05	0.0000
Th-228	1.314E-01	0.2355	1.993E-02	0.0357	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.929E-06	0.0000
Th-232	3.145E-02	0.0563	1.635E-01	0.2929	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.496E-05	0.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.615E-01	0.6475	1.967E-01	0.3524	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-05	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.118E-01	0.3795
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	1.514E-01	0.2712
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	1.950E-01	0.3493
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.582E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.150E-01	0.3855	1.939E-02	0.0348	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-05	0.0000
Th-228	6.368E-02	0.1142	9.655E-03	0.0173	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.903E-06	0.0000
Th-232	8.235E-02	0.1477	1.676E-01	0.3005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.789E-05	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.610E-01	0.6473	1.967E-01	0.3526	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-05	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.344E-01	0.4203
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	7.333E-02	0.1315
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	2.500E-01	0.4482
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.577E-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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.252E-01	0.2250	1.334E-02	0.0240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.954E-06	0.0000
Th-228	5.038E-03	0.0091	7.640E-04	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.506E-07	0.0000
Th-232	2.295E-01	0.4127	1.823E-01	0.3278	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.598E-01	0.6468	1.964E-01	0.3532	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-05	0.0001

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.385E-01	0.2490
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	5.803E-03	0.0104
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	4.119E-01	0.7405
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.563E-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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.168E-02	0.0211	1.274E-03	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.439E-07	0.0000
Th-228	3.586E-06	0.0000	5.437E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-10	0.0000
Th-232	3.467E-01	0.6253	1.948E-01	0.3513	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.584E-01	0.6463	1.961E-01	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.122E-05	0.0001

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.296E-02	0.0234
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	4.130E-06	0.0000
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	5.415E-01	0.9766
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.545E-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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.365E-06	0.0000	2.580E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-10	0.0000
Th-228	3.449E-17	0.0000	5.230E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-21	0.0000
Th-232	3.564E-01	0.6463	1.950E-01	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.564E-01	0.6463	1.950E-01	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-05	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.623E-06	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	3.973E-17	0.0000
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	5.515E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.515E-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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	6.603E-17	0.0000	7.204E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-21	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-232	3.512E-01	0.6463	1.922E-01	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.512E-01	0.6463	1.922E-01	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-05	0.0001

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	7.323E-17	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-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	5.435E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.435E-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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-232	3.336E-01	0.6463	1.825E-01	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.336E-01	0.6463	1.825E-01	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-05	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-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	5.161E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.161E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	1.291E-01	1.143E-01	8.966E-02	3.830E-02	3.371E-03	6.822E-07	1.905E-17	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	4.009E-02	9.752E-02	1.447E-01	1.002E-01	9.584E-03	1.941E-06	5.419E-17	0.000E+00
Ra-228+D	äDSR(j)		1.692E-01	2.118E-01	2.344E-01	1.385E-01	1.296E-02	2.623E-06	7.323E-17	0.000E+00
Th-228+D	Th-228+D	1.000E+00	2.175E-01	1.514E-01	7.333E-02	5.803E-03	4.130E-06	3.973E-17	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	1.621E-01	1.621E-01	1.621E-01	1.620E-01	1.618E-01	1.609E-01	1.586E-01	1.506E-01
Th-232	Ra-228+D	1.000E+00	7.939E-03	2.259E-02	4.706E-02	9.797E-02	1.324E-01	1.351E-01	1.331E-01	1.264E-01
Th-232	Th-228+D	1.000E+00	1.676E-03	1.028E-02	4.083E-02	1.519E-01	2.473E-01	2.555E-01	2.518E-01	2.391E-01
Th-232	äDSR(j)		1.718E-01	1.950E-01	2.500E-01	4.119E-01	5.415E-01	5.515E-01	5.435E-01	5.161E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.478E+02	1.180E+02	1.067E+02	1.805E+02	1.930E+03	9.532E+06	*2.726E+14	*2.726E+14	
Th-228	1.149E+02	1.651E+02	3.409E+02	4.308E+03	6.053E+06	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	1.456E+02	1.282E+02	1.000E+02	6.069E+01	4.617E+01	4.533E+01	4.600E+01	4.844E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.807 ñ 0.006	2.346E-01	1.066E+02	1.692E-01	1.478E+02
Th-228	1.000E+00	0.000E+00	2.175E-01	1.149E+02	2.175E-01	1.149E+02
Th-232	1.000E+00	60.0 ñ 0.1	5.528E-01	4.522E+01	1.718E-01	1.456E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.291E-01	1.143E-01	8.966E-02	3.830E-02	3.371E-03	6.822E-07	1.905E-17	0.000E+00	
Ra-228	Th-232	1.000E+00	7.939E-03	2.259E-02	4.706E-02	9.797E-02	1.324E-01	1.351E-01	1.331E-01	1.264E-01	
Ra-228	äDOSE(j)		1.370E-01	1.369E-01	1.367E-01	1.363E-01	1.358E-01	1.351E-01	1.331E-01	1.264E-01	
Th-228	Ra-228	1.000E+00	4.009E-02	9.752E-02	1.447E-01	1.002E-01	9.584E-03	1.941E-06	5.419E-17	0.000E+00	
Th-228	Th-228	1.000E+00	2.175E-01	1.514E-01	7.333E-02	5.803E-03	4.130E-06	3.973E-17	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	1.676E-03	1.028E-02	4.083E-02	1.519E-01	2.473E-01	2.555E-01	2.518E-01	2.391E-01	
Th-228	äDOSE(j)		2.593E-01	2.592E-01	2.589E-01	2.580E-01	2.569E-01	2.555E-01	2.518E-01	2.391E-01	
Th-232	Th-232	1.000E+00	1.621E-01	1.621E-01	1.621E-01	1.620E-01	1.618E-01	1.609E-01	1.586E-01	1.506E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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

RESCALC.EXE execution time = 1.09 seconds

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : RESRAD Harshaw OU1 Model AF 3 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 3 SM TH-232.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
=====				
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
=====				
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
=====				
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
=====				
D-34	Food transfer factors:			
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
=====				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
=====				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
=====				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
=====				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
=====				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

=====

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	3.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

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)								
XX								
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.031E+00	1.031E+00	1.030E+00	1.027E+00	1.023E+00	1.018E+00	1.003E+00	9.526E-01
M(t):	4.126E-02	4.124E-02	4.120E-02	4.108E-02	4.094E-02	4.072E-02	4.012E-02	3.810E-02

Maximum TDOSE(t): 1.031E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	3.641E-01	0.3530	6.484E-03	0.0063	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.702E-05	0.0000
Th-228	4.245E-01	0.4116	3.229E-02	0.0313	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.693E-05	0.0000
Th-232	2.088E-02	0.0202	1.831E-01	0.1775	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.037E-05	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	8.095E-01	0.7848	2.218E-01	0.2151	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.706E-01	0.3593
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	4.569E-01	0.4429
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	2.040E-01	0.1978
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.031E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	4.435E-01	0.4301	1.495E-02	0.0145	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.762E-05	0.0000
Th-228	2.955E-01	0.2866	2.247E-02	0.0218	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.179E-05	0.0000
Th-232	7.012E-02	0.0680	1.844E-01	0.1788	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.488E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.091E-01	0.7847	2.218E-01	0.2151	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	4.585E-01	0.4447
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	3.180E-01	0.3084
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	2.546E-01	0.2469
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.031E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TH-232.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	4.811E-01	0.4671	2.186E-02	0.0212	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.482E-05	0.0000
Th-228	1.431E-01	0.1390	1.089E-02	0.0106	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.709E-06	0.0000
Th-232	1.839E-01	0.1786	1.890E-01	0.1835	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.368E-05	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.081E-01	0.7846	2.218E-01	0.2153	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.242E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	5.030E-01	0.4883
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	1.540E-01	0.1495
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	3.730E-01	0.3621
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.030E+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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.804E-01	0.2731	1.504E-02	0.0146	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.786E-05	0.0000
Th-228	1.133E-02	0.0110	8.615E-04	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.518E-07	0.0000
Th-232	5.135E-01	0.5001	2.056E-01	0.2002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.057E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.053E-01	0.7842	2.215E-01	0.2157	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.240E-04	0.0001

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.955E-01	0.2877
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	1.219E-02	0.0119
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	7.193E-01	0.7004
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.027E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.617E-02	0.0256	1.437E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-06	0.0000
Th-228	8.061E-06	0.0000	6.131E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.215E-10	0.0000
Th-232	7.760E-01	0.7583	2.196E-01	0.2146	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.220E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.022E-01	0.7838	2.211E-01	0.2160	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-04	0.0001

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.761E-02	0.0270
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	8.675E-06	0.0000
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	9.958E-01	0.9730
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.023E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	5.298E-06	0.0000	2.909E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.302E-10	0.0000
Th-228	7.754E-17	0.0000	5.898E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.093E-21	0.0000
Th-232	7.979E-01	0.7838	2.199E-01	0.2161	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	7.979E-01	0.7838	2.199E-01	0.2161	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	5.590E-06	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	8.344E-17	0.0000
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	1.018E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.018E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.479E-16	0.0000	8.123E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.221E-21	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-232	7.862E-01	0.7838	2.167E-01	0.2161	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	7.862E-01	0.7838	2.167E-01	0.2161	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-04	0.0001

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.561E-16	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-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	1.003E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.003E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-232	7.467E-01	0.7838	2.058E-01	0.2161	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	7.467E-01	0.7838	2.058E-01	0.2161	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-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	9.526E-01	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	9.526E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	
Ra-228+D	Ra-228+D	1.000E+00	2.864E-01	2.536E-01	1.989E-01	8.498E-02	7.480E-03	1.513E-06	4.226E-17	0.000E+00	
Ra-228+D	Th-228+D	1.000E+00	8.420E-02	2.048E-01	3.040E-01	2.105E-01	2.013E-02	4.076E-06	1.138E-16	0.000E+00	
Ra-228+D	äDSR(j)		3.706E-01	4.585E-01	5.030E-01	2.955E-01	2.761E-02	5.590E-06	1.561E-16	0.000E+00	
Th-228+D	Th-228+D	1.000E+00	4.569E-01	3.180E-01	1.540E-01	1.219E-02	8.675E-06	8.344E-17	0.000E+00	0.000E+00	
Th-232	Th-232	1.000E+00	1.829E-01	1.829E-01	1.829E-01	1.828E-01	1.825E-01	1.815E-01	1.789E-01	1.699E-01	
Th-232	Ra-228+D	1.000E+00	1.761E-02	5.012E-02	1.044E-01	2.174E-01	2.938E-01	2.997E-01	2.953E-01	2.805E-01	
Th-232	Th-228+D	1.000E+00	3.520E-03	2.159E-02	8.577E-02	3.191E-01	5.194E-01	5.367E-01	5.288E-01	5.022E-01	
Th-232	äDSR(j)		2.040E-01	2.546E-01	3.730E-01	7.193E-01	9.958E-01	1.018E+00	1.003E+00	9.526E-01	
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	6.745E+01	5.453E+01	4.970E+01	8.460E+01	9.054E+02	4.473E+06	*2.726E+14	*2.726E+14	
Th-228	5.472E+01	7.862E+01	1.623E+02	2.051E+03	2.882E+06	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	1.225E+02	9.820E+01	6.702E+01	3.476E+01	2.511E+01	2.456E+01	2.492E+01	2.624E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.748 ñ 0.005	5.037E-01	4.964E+01	3.706E-01	6.745E+01
Th-228	1.000E+00	0.000E+00	4.569E-01	5.472E+01	4.569E-01	5.472E+01
Th-232	1.000E+00	61.3 ñ 0.1	1.020E+00	2.450E+01	2.040E-01	1.225E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	2.864E-01	2.536E-01	1.989E-01	8.498E-02	7.480E-03	1.513E-06	4.226E-17	0.000E+00	
Ra-228	Th-232	1.000E+00	1.761E-02	5.012E-02	1.044E-01	2.174E-01	2.938E-01	2.997E-01	2.953E-01	2.805E-01	
Ra-228	äDOSE(j)		3.040E-01	3.038E-01	3.033E-01	3.023E-01	3.013E-01	2.997E-01	2.953E-01	2.805E-01	
Th-228	Ra-228	1.000E+00	8.420E-02	2.048E-01	3.040E-01	2.105E-01	2.013E-02	4.076E-06	1.138E-16	0.000E+00	
Th-228	Th-228	1.000E+00	4.569E-01	3.180E-01	1.540E-01	1.219E-02	8.675E-06	8.344E-17	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	3.520E-03	2.159E-02	8.577E-02	3.191E-01	5.194E-01	5.367E-01	5.288E-01	5.022E-01	
Th-228	äDOSE(j)		5.446E-01	5.444E-01	5.439E-01	5.419E-01	5.396E-01	5.367E-01	5.288E-01	5.022E-01	
Th-232	Th-232	1.000E+00	1.829E-01	1.829E-01	1.829E-01	1.828E-01	1.825E-01	1.815E-01	1.789E-01	1.699E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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

RESCALC.EXE execution time = 1.11 seconds

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 10 SM TH-232.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
=====				
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
=====				
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
=====				
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
=====				
D-34	Food transfer factors:			
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
=====				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
=====				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
=====				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
=====				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
=====				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

=====

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

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

	User	Used by RESRAD	Parameter	
Menu	Input	Default (If different from user input)	Name	
=====				
R011	Area of contaminated zone (m**2)	1.000E+01 1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00 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)	3.000E+00 3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01 1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01 3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02 1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02 3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03 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): Ra-228	1.000E+00 0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00 0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00 0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used 0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used 0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used 0.000E+00	---	W1(3)
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)	1.330E+00 1.500E+00	---	DENSCHZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05 1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01 4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01 2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02 1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00 5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00 2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used 8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01 5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01 1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01 2.000E-01	---	RI
R013	Irrigation mode	overhead overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	10.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.938E+00	1.937E+00	1.935E+00	1.929E+00	1.922E+00	1.911E+00	1.883E+00	1.789E+00
M(t):	7.751E-02	7.747E-02	7.739E-02	7.714E-02	7.686E-02	7.645E-02	7.533E-02	7.155E-02

Maximum TDOSE(t): 1.938E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	7.561E-01	0.3902	7.391E-03	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-04	0.0001
Th-228	8.850E-01	0.4567	3.681E-02	0.0190	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.644E-05	0.0000
Th-232	4.335E-02	0.0224	2.087E-01	0.1077	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.684E+00	0.8693	2.529E-01	0.1305	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.144E-04	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	7.636E-01	0.3941
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	9.219E-01	0.4757
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	2.523E-01	0.1302
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.938E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	9.220E-01	0.4760	1.704E-02	0.0088	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E-04	0.0001
Th-228	6.160E-01	0.3180	2.562E-02	0.0132	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.929E-05	0.0000
Th-232	1.457E-01	0.0752	2.102E-01	0.1085	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.496E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.684E+00	0.8692	2.528E-01	0.1305	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-04	0.0002

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	9.391E-01	0.4849
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	6.416E-01	0.3313
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	3.561E-01	0.1839
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.937E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.001E+00	0.5173	2.492E-02	0.0129	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-04	0.0001
Th-228	2.984E-01	0.1542	1.241E-02	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.903E-05	0.0000
Th-232	3.824E-01	0.1976	2.154E-01	0.1114	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.789E-04	0.0001
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.682E+00	0.8691	2.528E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-04	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.026E+00	0.5302
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	3.108E-01	0.1606
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	5.981E-01	0.3091
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	1.935E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 10 SM TH-232.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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	5.838E-01	0.3027	1.714E-02	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.954E-05	0.0000
Th-228	2.361E-02	0.0122	9.819E-04	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.506E-06	0.0000
Th-232	1.068E+00	0.5539	2.344E-01	0.1215	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.676E+00	0.8689	2.525E-01	0.1309	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-04	0.0002

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	6.010E-01	0.3116
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	2.459E-02	0.0128
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	1.303E+00	0.6756
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.929E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 10 SM TH-232.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	5.448E-02	0.0284	1.638E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.439E-06	0.0000
Th-228	1.680E-05	0.0000	6.989E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-09	0.0000
Th-232	1.615E+00	0.8403	2.504E-01	0.1303	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.669E+00	0.8686	2.520E-01	0.1311	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.122E-04	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	5.613E-02	0.0292
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	1.750E-05	0.0000
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	1.865E+00	0.9708
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.922E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 10 SM TH-232.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.103E-05	0.0000	3.316E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-09	0.0000
Th-228	1.616E-16	0.0000	6.722E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-20	0.0000
Th-232	1.660E+00	0.8686	2.507E-01	0.1312	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.660E+00	0.8686	2.507E-01	0.1312	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-04	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.136E-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	1.684E-16	0.0000
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	1.911E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.911E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 10 SM TH-232.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	3.080E-16	0.0000	9.259E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-20	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-232	1.636E+00	0.8686	2.470E-01	0.1312	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.636E+00	0.8686	2.470E-01	0.1312	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-04	0.0002

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.173E-16	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-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	1.883E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.883E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 10 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 10 SM TH-232.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	1.554E+00	0.8686	2.346E-01	0.1312	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.554E+00	0.8686	2.346E-01	0.1312	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-04	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	1.789E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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.

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	5.937E-01	5.258E-01	4.124E-01	1.762E-01	1.551E-02	3.137E-06	8.761E-17	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	1.699E-01	4.133E-01	6.135E-01	4.248E-01	4.062E-02	8.225E-06	2.297E-16	0.000E+00
Ra-228+D	äDSR(j)		7.636E-01	9.391E-01	1.026E+00	6.010E-01	5.613E-02	1.136E-05	3.173E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	9.219E-01	6.416E-01	3.108E-01	2.459E-02	1.750E-05	1.684E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	2.086E-01	2.086E-01	2.086E-01	2.085E-01	2.082E-01	2.071E-01	2.041E-01	1.938E-01
Th-232	Ra-228+D	1.000E+00	3.651E-02	1.039E-01	2.164E-01	4.506E-01	6.091E-01	6.213E-01	6.122E-01	5.814E-01
Th-232	Th-228+D	1.000E+00	7.104E-03	4.357E-02	1.731E-01	6.440E-01	1.048E+00	1.083E+00	1.067E+00	1.013E+00
Th-232	äDSR(j)		2.523E-01	3.561E-01	5.981E-01	1.303E+00	1.865E+00	1.911E+00	1.883E+00	1.789E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	3.274E+01	2.662E+01	2.437E+01	4.160E+01	4.454E+02	2.200E+06	*2.726E+14	*2.726E+14	
Th-228	2.712E+01	3.896E+01	8.043E+01	1.017E+03	1.428E+06	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	9.910E+01	7.021E+01	4.180E+01	1.919E+01	1.340E+01	1.308E+01	1.327E+01	1.398E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.715 ñ 0.005	1.028E+00	2.433E+01	7.636E-01	3.274E+01
Th-228	1.000E+00	0.000E+00	9.219E-01	2.712E+01	9.219E-01	2.712E+01
Th-232	1.000E+00	61.9 ñ 0.1	1.916E+00	1.305E+01	2.523E-01	9.910E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	5.937E-01	5.258E-01	4.124E-01	1.762E-01	1.551E-02	3.137E-06	8.761E-17	0.000E+00	
Ra-228	Th-232	1.000E+00	3.651E-02	1.039E-01	2.164E-01	4.506E-01	6.091E-01	6.213E-01	6.122E-01	5.814E-01	
Ra-228	äDOSE(j)		6.303E-01	6.297E-01	6.288E-01	6.267E-01	6.246E-01	6.213E-01	6.122E-01	5.814E-01	
Th-228	Ra-228	1.000E+00	1.699E-01	4.133E-01	6.135E-01	4.248E-01	4.062E-02	8.225E-06	2.297E-16	0.000E+00	
Th-228	Th-228	1.000E+00	9.219E-01	6.416E-01	3.108E-01	2.459E-02	1.750E-05	1.684E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	7.104E-03	4.357E-02	1.731E-01	6.440E-01	1.048E+00	1.083E+00	1.067E+00	1.013E+00	
Th-228	äDOSE(j)		1.099E+00	1.099E+00	1.097E+00	1.093E+00	1.089E+00	1.083E+00	1.067E+00	1.013E+00	
Th-232	Th-232	1.000E+00	2.086E-01	2.086E-01	2.086E-01	2.085E-01	2.082E-01	2.071E-01	2.041E-01	1.938E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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

RESCALC.EXE execution time = 1.17 seconds

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
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Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter		
Menu	Input	Default (If different from user input)	Name		
R011	Area of contaminated zone (m**2)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCHZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCHZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

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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	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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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

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)	5.000E-02	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

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

[illegible]

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.049E+00	0.3987	8.323E-03	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.702E-04	0.0001
Th-228	1.237E+00	0.4699	4.144E-02	0.0157	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.693E-04	0.0001
Th-232	6.013E-02	0.0228	2.350E-01	0.0893	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.037E-04	0.0003
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.346E+00	0.8914	2.847E-01	0.1082	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-03	0.0005

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.058E+00	0.4020
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	1.278E+00	0.4857
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	2.958E-01	0.1124
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.632E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.282E+00	0.4873	1.919E-02	0.0073	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.762E-04	0.0001
Th-228	8.609E-01	0.3272	2.885E-02	0.0110	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.179E-04	0.0000
Th-232	2.023E-01	0.0769	2.367E-01	0.0899	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.488E-04	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.345E+00	0.8913	2.847E-01	0.1082	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-03	0.0005

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.302E+00	0.4947
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	8.898E-01	0.3382
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	4.397E-01	0.1671
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.631E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.394E+00	0.5303	2.806E-02	0.0107	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.482E-04	0.0001
Th-228	4.170E-01	0.1587	1.397E-02	0.0053	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.709E-05	0.0000
Th-232	5.317E-01	0.2023	2.426E-01	0.0923	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.368E-04	0.0003
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.342E+00	0.8912	2.846E-01	0.1083	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.242E-03	0.0005

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.422E+00	0.5411
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	4.311E-01	0.1640
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	7.752E-01	0.2949
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.628E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	8.137E-01	0.3106	1.930E-02	0.0074	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.786E-04	0.0001
Th-228	3.300E-02	0.0126	1.106E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.518E-06	0.0000
Th-232	1.488E+00	0.5678	2.639E-01	0.1007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.057E-03	0.0004
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.334E+00	0.8910	2.843E-01	0.1085	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.240E-03	0.0005

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	8.332E-01	0.3180
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	3.411E-02	0.0130
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	1.753E+00	0.6690
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.620E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	7.596E-02	0.0291	1.844E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-05	0.0000
Th-228	2.349E-05	0.0000	7.870E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.215E-09	0.0000
Th-232	2.249E+00	0.8617	2.819E-01	0.1080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.220E-03	0.0005
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.325E+00	0.8908	2.838E-01	0.1087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-03	0.0005

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	7.782E-02	0.0298
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	2.428E-05	0.0000
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	2.532E+00	0.9702
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.610E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 30 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.538E-05	0.0000	3.734E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.302E-09	0.0000
Th-228	2.259E-16	0.0000	7.570E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.093E-20	0.0000
Th-232	2.313E+00	0.8908	2.823E-01	0.1087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-03	0.0005
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.313E+00	0.8908	2.823E-01	0.1087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-03	0.0005

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.575E-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	2.335E-16	0.0000
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	2.596E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.596E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 30 SM TH-232.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	4.294E-16	0.0000	1.043E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.221E-20	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-232	2.279E+00	0.8908	2.782E-01	0.1087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-03	0.0005
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.279E+00	0.8908	2.782E-01	0.1087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-03	0.0005

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	4.399E-16	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-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	2.558E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.558E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 30 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 30 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-232	2.164E+00	0.8908	2.642E-01	0.1087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-03	0.0005
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.164E+00	0.8908	2.642E-01	0.1087	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-03	0.0005

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-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	2.430E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.430E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	8.225E-01	7.284E-01	5.712E-01	2.440E-01	2.148E-02	4.346E-06	1.214E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	2.356E-01	5.732E-01	8.509E-01	5.891E-01	5.634E-02	1.141E-05	3.185E-16	0.000E+00
Ra-228+D	äDSR(j)		1.058E+00	1.302E+00	1.422E+00	8.332E-01	7.782E-02	1.575E-05	4.399E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.278E+00	8.898E-01	4.311E-01	3.411E-02	2.428E-05	2.335E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	2.354E-01	2.354E-01	2.353E-01	2.352E-01	2.349E-01	2.336E-01	2.302E-01	2.187E-01
Th-232	Ra-228+D	1.000E+00	5.058E-02	1.439E-01	2.998E-01	6.242E-01	8.438E-01	8.607E-01	8.481E-01	8.055E-01
Th-232	Th-228+D	1.000E+00	9.852E-03	6.042E-02	2.400E-01	8.931E-01	1.454E+00	1.502E+00	1.480E+00	1.405E+00
Th-232	äDSR(j)		2.958E-01	4.397E-01	7.752E-01	1.753E+00	2.532E+00	2.596E+00	2.558E+00	2.430E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	2.363E+01	1.921E+01	1.758E+01	3.001E+01	3.213E+02	1.587E+06	*2.726E+14	*2.726E+14	
Th-228	1.955E+01	2.809E+01	5.800E+01	7.330E+02	1.030E+06	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	8.451E+01	5.685E+01	3.225E+01	1.427E+01	9.872E+00	9.630E+00	9.773E+00	1.029E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.716 ñ 0.005	1.425E+00	1.755E+01	1.058E+00	2.363E+01
Th-228	1.000E+00	0.000E+00	1.278E+00	1.955E+01	1.278E+00	1.955E+01
Th-232	1.000E+00	62.0 ñ 0.1	2.602E+00	9.608E+00	2.958E-01	8.451E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	8.225E-01	7.284E-01	5.712E-01	2.440E-01	2.148E-02	4.346E-06	1.214E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	5.058E-02	1.439E-01	2.998E-01	6.242E-01	8.438E-01	8.607E-01	8.481E-01	8.055E-01	
Ra-228	äDOSE(j)		8.731E-01	8.723E-01	8.711E-01	8.682E-01	8.653E-01	8.607E-01	8.481E-01	8.055E-01	
Th-228	Ra-228	1.000E+00	2.356E-01	5.732E-01	8.509E-01	5.891E-01	5.634E-02	1.141E-05	3.185E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.278E+00	8.898E-01	4.311E-01	3.411E-02	2.428E-05	2.335E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	9.852E-03	6.042E-02	2.400E-01	8.931E-01	1.454E+00	1.502E+00	1.480E+00	1.405E+00	
Th-228	äDOSE(j)		1.524E+00	1.523E+00	1.522E+00	1.516E+00	1.510E+00	1.502E+00	1.480E+00	1.405E+00	
Th-232	Th-232	1.000E+00	2.354E-01	2.354E-01	2.353E-01	2.352E-01	2.349E-01	2.336E-01	2.302E-01	2.187E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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

RESCALC.EXE execution time = 1.20 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM TH-232.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
=====				
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34	Food transfer factors:			
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
R011	Area of contaminated zone (m**2)	1.000E+02	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	BRDL
R011	Time since placement of material (yr)	0.000E+00	TI
R011	Times for calculations (yr)	1.000E+00	T(2)
R011	Times for calculations (yr)	3.000E+00	T(3)
R011	Times for calculations (yr)	1.000E+01	T(4)
R011	Times for calculations (yr)	3.000E+01	T(5)
R011	Times for calculations (yr)	1.000E+02	T(6)
R011	Times for calculations (yr)	3.000E+02	T(7)
R011	Times for calculations (yr)	1.000E+03	T(8)
R011	Times for calculations (yr)	not used	T(9)
R011	Times for calculations (yr)	not used	T(10)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	W1(3)
R013	Cover depth (m)	0.000E+00	COVER0
R013	Density of cover material (g/cm**3)	not used	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	VCV
R013	Density of contaminated zone (g/cm**3)	1.330E+00	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	VCZ
R013	Contaminated zone total porosity	5.000E-01	TPCZ
R013	Contaminated zone field capacity	2.000E-01	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	HCCZ
R013	Contaminated zone b parameter	4.900E+00	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	WIND
R013	Humidity in air (g/m**3)	not used	HUMID
R013	Evapotranspiration coefficient	4.950E-01	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	PRECIP
R013	Irrigation (m/yr)	2.000E-01	RI
R013	Irrigation mode	overhead	IDITCH
R013	Runoff coefficient	2.000E-01	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	WAREA
R013	Accuracy for water/soil computations	not used	EPS
R014	Density of saturated zone (g/cm**3)	not used	DENSAQ
R014	Saturated zone total porosity	not used	TPSZ
R014	Saturated zone effective porosity	not used	EPSZ
R014	Saturated zone field capacity	not used	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	HCSZ
R014	Saturated zone hydraulic gradient	not used	HGWT
R014	Saturated zone b parameter	not used	BSZ
R014	Water table drop rate (m/yr)	not used	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

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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

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)	5.000E-02	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

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

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

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	100.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.236E+00	3.235E+00	3.231E+00	3.220E+00	3.209E+00	3.191E+00	3.145E+00	2.987E+00
M(t):	1.294E-01	1.294E-01	1.292E-01	1.288E-01	1.283E-01	1.277E-01	1.258E-01	1.195E-01

Maximum TDOSE(t): 3.236E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.298E+00	0.4010	9.470E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-03	0.0004
Th-228	1.536E+00	0.4746	4.716E-02	0.0146	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.644E-04	0.0002
Th-232	7.433E-02	0.0230	2.674E-01	0.0826	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-03	0.0007
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.908E+00	0.8986	3.240E-01	0.1001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.144E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.308E+00	0.4043
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	1.584E+00	0.4894
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	3.440E-01	0.1063
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.236E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.587E+00	0.4907	2.183E-02	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E-03	0.0004
Th-228	1.069E+00	0.3305	3.282E-02	0.0101	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.929E-04	0.0001
Th-232	2.502E-01	0.0774	2.693E-01	0.0833	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.496E-03	0.0008
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.906E+00	0.8986	3.240E-01	0.1002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.610E+00	0.4978
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	1.102E+00	0.3408
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	5.220E-01	0.1614
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.235E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM TH-232.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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.727E+00	0.5345	3.192E-02	0.0099	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-03	0.0004
Th-228	5.179E-01	0.1603	1.590E-02	0.0049	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.903E-04	0.0001
Th-232	6.583E-01	0.2037	2.760E-01	0.0854	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.789E-03	0.0009
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.903E+00	0.8985	3.239E-01	0.1002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.760E+00	0.5447
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	5.340E-01	0.1653
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	9.371E-01	0.2900
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.231E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM TH-232.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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.009E+00	0.3132	2.196E-02	0.0068	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.954E-04	0.0002
Th-228	4.098E-02	0.0127	1.258E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.506E-05	0.0000
Th-232	1.843E+00	0.5723	3.003E-01	0.0932	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-03	0.0011
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.893E+00	0.8983	3.235E-01	0.1005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-03	0.0013

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.031E+00	0.3203
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	4.225E-02	0.0131
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	2.147E+00	0.6666
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.220E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM TH-232.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	9.418E-02	0.0294	2.098E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.439E-05	0.0000
Th-228	2.916E-05	0.0000	8.954E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-08	0.0000
Th-232	2.787E+00	0.8687	3.208E-01	0.1000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-03	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.882E+00	0.8981	3.229E-01	0.1006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.122E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	9.633E-02	0.0300
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	3.007E-05	0.0000
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	3.112E+00	0.9700
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.209E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.907E-05	0.0000	4.249E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-08	0.0000
Th-228	2.805E-16	0.0000	8.613E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-19	0.0000
Th-232	2.866E+00	0.8981	3.212E-01	0.1006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-03	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.866E+00	0.8981	3.212E-01	0.1006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.950E-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	2.892E-16	0.0000
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	3.191E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.191E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM TH-232.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	5.324E-16	0.0000	1.186E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-19	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-232	2.824E+00	0.8981	3.165E-01	0.1006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-03	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.824E+00	0.8981	3.165E-01	0.1006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-03	0.0013

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	5.445E-16	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-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	3.145E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.145E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 100 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 100 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-232	2.682E+00	0.8981	3.006E-01	0.1006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-03	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.682E+00	0.8981	3.006E-01	0.1006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-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	2.987E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.987E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	1.017E+00	9.002E-01	7.060E-01	3.016E-01	2.655E-02	5.371E-06	1.500E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	2.919E-01	7.101E-01	1.054E+00	7.298E-01	6.978E-02	1.413E-05	3.945E-16	0.000E+00
Ra-228+D	äDSR(j)		1.308E+00	1.610E+00	1.760E+00	1.031E+00	9.633E-02	1.950E-05	5.445E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.584E+00	1.102E+00	5.340E-01	4.225E-02	3.007E-05	2.892E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	2.693E-01	2.693E-01	2.693E-01	2.691E-01	2.687E-01	2.673E-01	2.634E-01	2.502E-01
Th-232	Ra-228+D	1.000E+00	6.251E-02	1.779E-01	3.705E-01	7.714E-01	1.043E+00	1.064E+00	1.048E+00	9.955E-01
Th-232	Th-228+D	1.000E+00	1.220E-02	7.485E-02	2.973E-01	1.106E+00	1.801E+00	1.860E+00	1.833E+00	1.741E+00
Th-232	äDSR(j)		3.440E-01	5.220E-01	9.371E-01	2.147E+00	3.112E+00	3.191E+00	3.145E+00	2.987E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.911E+01	1.553E+01	1.421E+01	2.424E+01	2.595E+02	1.282E+06	*2.726E+14	*2.726E+14	
Th-228	1.579E+01	2.268E+01	4.682E+01	5.917E+02	8.314E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	7.267E+01	4.789E+01	2.668E+01	1.165E+01	8.033E+00	7.834E+00	7.950E+00	8.371E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.719 ñ 0.005	1.763E+00	1.418E+01	1.308E+00	1.911E+01
Th-228	1.000E+00	0.000E+00	1.584E+00	1.579E+01	1.584E+00	1.579E+01
Th-232	1.000E+00	62.2 ñ 0.1	3.198E+00	7.817E+00	3.440E-01	7.267E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.017E+00	9.002E-01	7.060E-01	3.016E-01	2.655E-02	5.371E-06	1.500E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	6.251E-02	1.779E-01	3.705E-01	7.714E-01	1.043E+00	1.064E+00	1.048E+00	9.955E-01	
Ra-228	äDOSE(j)		1.079E+00	1.078E+00	1.077E+00	1.073E+00	1.069E+00	1.064E+00	1.048E+00	9.955E-01	
Th-228	Ra-228	1.000E+00	2.919E-01	7.101E-01	1.054E+00	7.298E-01	6.978E-02	1.413E-05	3.945E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.584E+00	1.102E+00	5.340E-01	4.225E-02	3.007E-05	2.892E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	1.220E-02	7.485E-02	2.973E-01	1.106E+00	1.801E+00	1.860E+00	1.833E+00	1.741E+00	
Th-228	äDOSE(j)		1.888E+00	1.887E+00	1.885E+00	1.878E+00	1.870E+00	1.860E+00	1.833E+00	1.741E+00	
Th-232	Th-232	1.000E+00	2.693E-01	2.693E-01	2.693E-01	2.691E-01	2.687E-01	2.673E-01	2.634E-01	2.502E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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

RESCALC.EXE execution time = 1.10 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Dose Library: FGR 11

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	3.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 300 SM TH-232.RAD

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

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)	5.000E-02	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

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

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

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)								
XX								
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.525E+00	3.523E+00	3.519E+00	3.508E+00	3.495E+00	3.476E+00	3.425E+00	3.253E+00
M(t):	1.410E-01	1.409E-01	1.408E-01	1.403E-01	1.398E-01	1.390E-01	1.370E-01	1.301E-01

Maximum TDOSE(t): 3.525E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.403E+00	0.3979	1.064E-02	0.0030	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.702E-03	0.0011
Th-228	1.665E+00	0.4724	5.300E-02	0.0150	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.693E-03	0.0005
Th-232	8.032E-02	0.0228	3.005E-01	0.0853	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.037E-03	0.0020
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.148E+00	0.8932	3.642E-01	0.1033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-02	0.0035

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.417E+00	0.4020
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	1.720E+00	0.4879
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	3.879E-01	0.1100
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.525E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.717E+00	0.4874	2.454E-02	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.762E-03	0.0011
Th-228	1.159E+00	0.3290	3.689E-02	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.179E-03	0.0003
Th-232	2.706E-01	0.0768	3.027E-01	0.0859	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.488E-03	0.0021
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.146E+00	0.8931	3.641E-01	0.1034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.243E-02	0.0035

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.745E+00	0.4954
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	1.197E+00	0.3398
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	5.807E-01	0.1648
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.523E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.869E+00	0.5311	3.588E-02	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.482E-03	0.0010
Th-228	5.614E-01	0.1595	1.787E-02	0.0051	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.709E-04	0.0002
Th-232	7.121E-01	0.2024	3.103E-01	0.0882	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.368E-03	0.0024
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.143E+00	0.8930	3.640E-01	0.1034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.242E-02	0.0035

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.909E+00	0.5423
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	5.799E-01	0.1648
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	1.031E+00	0.2929
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.519E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM TH-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.092E+00	0.3114	2.468E-02	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.786E-03	0.0005
Th-228	4.442E-02	0.0127	1.414E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.518E-05	0.0000
Th-232	1.995E+00	0.5687	3.375E-01	0.0962	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.057E-02	0.0030
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.132E+00	0.8928	3.636E-01	0.1037	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.240E-02	0.0035

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.119E+00	0.3190
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	4.588E-02	0.0131
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	2.343E+00	0.6679
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.508E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.020E-01	0.0292	2.359E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-04	0.0000
Th-228	3.162E-05	0.0000	1.006E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.215E-08	0.0000
Th-232	3.017E+00	0.8634	3.606E-01	0.1032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.220E-02	0.0035
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.119E+00	0.8926	3.629E-01	0.1038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-02	0.0035

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.045E-01	0.0299
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	3.266E-05	0.0000
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	3.390E+00	0.9701
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.495E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.065E-05	0.0000	4.775E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.302E-08	0.0000
Th-228	3.041E-16	0.0000	9.681E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.093E-19	0.0000
Th-232	3.103E+00	0.8926	3.610E-01	0.1039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-02	0.0035
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.103E+00	0.8926	3.610E-01	0.1039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-02	0.0035

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.116E-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	3.141E-16	0.0000
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	3.476E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.476E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	5.765E-16	0.0000	1.333E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.221E-19	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-232	3.057E+00	0.8926	3.557E-01	0.1039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-02	0.0035
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.057E+00	0.8926	3.557E-01	0.1039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-02	0.0035

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	5.908E-16	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-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	3.425E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.425E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 300 SM TH-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	2.904E+00	0.8926	3.379E-01	0.1039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-02	0.0035
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.904E+00	0.8926	3.379E-01	0.1039	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.151E-02	0.0035

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	3.253E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.253E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	1.100E+00	9.741E-01	7.640E-01	3.264E-01	2.873E-02	5.813E-06	1.623E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	3.170E-01	7.711E-01	1.145E+00	7.925E-01	7.578E-02	1.534E-05	4.285E-16	0.000E+00
Ra-228+D	äDSR(j)		1.417E+00	1.745E+00	1.909E+00	1.119E+00	1.045E-01	2.116E-05	5.908E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.720E+00	1.197E+00	5.799E-01	4.588E-02	3.266E-05	3.141E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	3.070E-01	3.070E-01	3.069E-01	3.067E-01	3.063E-01	3.047E-01	3.003E-01	2.852E-01
Th-232	Ra-228+D	1.000E+00	6.764E-02	1.925E-01	4.009E-01	8.348E-01	1.129E+00	1.151E+00	1.134E+00	1.077E+00
Th-232	Th-228+D	1.000E+00	1.325E-02	8.128E-02	3.229E-01	1.201E+00	1.955E+00	2.020E+00	1.991E+00	1.891E+00
Th-232	äDSR(j)		3.879E-01	5.807E-01	1.031E+00	2.343E+00	3.390E+00	3.476E+00	3.425E+00	3.253E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.764E+01	1.432E+01	1.310E+01	2.234E+01	2.392E+02	1.182E+06	*2.726E+14	*2.726E+14	
Th-228	1.454E+01	2.089E+01	4.311E+01	5.449E+02	7.656E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	6.445E+01	4.305E+01	2.425E+01	1.067E+01	7.374E+00	7.192E+00	7.299E+00	7.685E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.723 ñ 0.005	1.912E+00	1.308E+01	1.417E+00	1.764E+01
Th-228	1.000E+00	0.000E+00	1.720E+00	1.454E+01	1.720E+00	1.454E+01
Th-232	1.000E+00	61.9 ñ 0.1	3.484E+00	7.176E+00	3.879E-01	6.445E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.100E+00	9.741E-01	7.640E-01	3.264E-01	2.873E-02	5.813E-06	1.623E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	6.764E-02	1.925E-01	4.009E-01	8.348E-01	1.129E+00	1.151E+00	1.134E+00	1.077E+00		
Ra-228	äDOSE(j)		1.168E+00	1.167E+00	1.165E+00	1.161E+00	1.157E+00	1.151E+00	1.134E+00	1.077E+00		
Th-228	Ra-228	1.000E+00	3.170E-01	7.711E-01	1.145E+00	7.925E-01	7.578E-02	1.534E-05	4.285E-16	0.000E+00		
Th-228	Th-228	1.000E+00	1.720E+00	1.197E+00	5.799E-01	4.588E-02	3.266E-05	3.141E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	1.325E-02	8.128E-02	3.229E-01	1.201E+00	1.955E+00	2.020E+00	1.991E+00	1.891E+00		
Th-228	äDOSE(j)		2.050E+00	2.049E+00	2.047E+00	2.040E+00	2.031E+00	2.020E+00	1.991E+00	1.891E+00		
Th-232	Th-232	1.000E+00	3.070E-01	3.070E-01	3.069E-01	3.067E-01	3.063E-01	3.047E-01	3.003E-01	2.852E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01		
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00		
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01		
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.12 seconds

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
=====				
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
=====				
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
=====				
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
=====				
D-34	Food transfer factors:			
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
=====				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
=====				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
=====				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
=====				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
=====				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

=====

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	1.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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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

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)	5.000E-02	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

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

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

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1000.00 square meters	Ra-228 1.000E+00
Thickness: 1.50 meters	Th-228 1.000E+00
Cover Depth: 0.00 meters	Th-232 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.765E+00	3.763E+00	3.759E+00	3.747E+00	3.733E+00	3.713E+00	3.659E+00	3.475E+00
M(t):	1.506E-01	1.505E-01	1.504E-01	1.499E-01	1.493E-01	1.485E-01	1.464E-01	1.390E-01

Maximum TDOSE(t): 3.765E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.473E+00	0.3912	1.208E-02	0.0032	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-02	0.0033
Th-228	1.753E+00	0.4656	6.018E-02	0.0160	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.644E-03	0.0015
Th-232	8.433E-02	0.0224	3.412E-01	0.0906	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-02	0.0062
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.310E+00	0.8792	4.134E-01	0.1098	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.144E-02	0.0110

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.497E+00	0.3977
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	1.819E+00	0.4830
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	4.490E-01	0.1192
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.765E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1000 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.804E+00	0.4794	2.786E-02	0.0074	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E-02	0.0033
Th-228	1.220E+00	0.3242	4.188E-02	0.0111	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.929E-03	0.0010
Th-232	2.842E-01	0.0755	3.437E-01	0.0913	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.496E-02	0.0066
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.308E+00	0.8791	4.134E-01	0.1098	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-02	0.0110

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.845E+00	0.4902
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	1.266E+00	0.3364
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	6.528E-01	0.1735
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.763E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.965E+00	0.5228	4.074E-02	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-02	0.0031
Th-228	5.910E-01	0.1572	2.029E-02	0.0054	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.903E-03	0.0005
Th-232	7.483E-01	0.1991	3.522E-01	0.0937	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.789E-02	0.0074
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.305E+00	0.8791	4.133E-01	0.1099	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-02	0.0110

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.018E+00	0.5367
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	6.132E-01	0.1631
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	1.128E+00	0.3002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.759E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.149E+00	0.3066	2.802E-02	0.0075	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.954E-03	0.0016
Th-228	4.676E-02	0.0125	1.605E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.506E-04	0.0000
Th-232	2.097E+00	0.5597	3.832E-01	0.1023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-02	0.0094
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.293E+00	0.8788	4.128E-01	0.1102	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-02	0.0110

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.183E+00	0.3157
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	4.852E-02	0.0129
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	2.516E+00	0.6714
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.747E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.073E-01	0.0287	2.678E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.439E-04	0.0001
Th-228	3.328E-05	0.0000	1.143E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-07	0.0000
Th-232	3.173E+00	0.8499	4.093E-01	0.1096	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-02	0.0109
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.280E+00	0.8786	4.120E-01	0.1104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.122E-02	0.0110

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.105E-01	0.0296
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	3.453E-05	0.0000
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	3.623E+00	0.9704
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.733E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.172E-05	0.0000	5.422E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-07	0.0000
Th-228	3.202E-16	0.0000	1.099E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-18	0.0000
Th-232	3.262E+00	0.8786	4.099E-01	0.1104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-02	0.0110
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.263E+00	0.8786	4.099E-01	0.1104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-02	0.0110

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.237E-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	3.322E-16	0.0000
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	3.713E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.713E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 1000 SM TH-232.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	6.064E-16	0.0000	1.514E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-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	0.000E+00	0.0000
Th-232	3.215E+00	0.8786	4.039E-01	0.1104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-02	0.0110
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.215E+00	0.8786	4.039E-01	0.1104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-02	0.0110

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	6.246E-16	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-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	3.659E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.659E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 1000 SM TH-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	3.053E+00	0.8786	3.836E-01	0.1104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-02	0.0110
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.053E+00	0.8786	3.836E-01	0.1104	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-02	0.0110

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	3.475E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.475E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	1.162E+00	1.029E+00	8.072E-01	3.448E-01	3.035E-02	6.141E-06	1.715E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	3.352E-01	8.154E-01	1.210E+00	8.381E-01	8.014E-02	1.623E-05	4.531E-16	0.000E+00
Ra-228+D	äDSR(j)		1.497E+00	1.845E+00	2.018E+00	1.183E+00	1.105E-01	2.237E-05	6.246E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.819E+00	1.266E+00	6.132E-01	4.852E-02	3.453E-05	3.322E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	3.635E-01	3.635E-01	3.634E-01	3.632E-01	3.627E-01	3.608E-01	3.555E-01	3.377E-01
Th-232	Ra-228+D	1.000E+00	7.147E-02	2.034E-01	4.236E-01	8.820E-01	1.192E+00	1.216E+00	1.198E+00	1.138E+00
Th-232	Th-228+D	1.000E+00	1.401E-02	8.596E-02	3.414E-01	1.270E+00	2.068E+00	2.136E+00	2.105E+00	1.999E+00
Th-232	äDSR(j)		4.490E-01	6.528E-01	1.128E+00	2.516E+00	3.623E+00	3.713E+00	3.659E+00	3.475E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.670E+01	1.355E+01	1.239E+01	2.113E+01	2.263E+02	1.118E+06	*2.726E+14	*2.726E+14	
Th-228	1.375E+01	1.975E+01	4.077E+01	5.153E+02	7.239E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	5.568E+01	3.830E+01	2.215E+01	9.938E+00	6.901E+00	6.732E+00	6.832E+00	7.194E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.724 ñ 0.005	2.021E+00	1.237E+01	1.497E+00	1.670E+01
Th-228	1.000E+00	0.000E+00	1.819E+00	1.375E+01	1.819E+00	1.375E+01
Th-232	1.000E+00	61.9 ñ 0.1	3.722E+00	6.718E+00	4.490E-01	5.568E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.162E+00	1.029E+00	8.072E-01	3.448E-01	3.035E-02	6.141E-06	1.715E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	7.147E-02	2.034E-01	4.236E-01	8.820E-01	1.192E+00	1.216E+00	1.198E+00	1.138E+00	
Ra-228	äDOSE(j)		1.234E+00	1.233E+00	1.231E+00	1.227E+00	1.223E+00	1.216E+00	1.198E+00	1.138E+00	
Th-228	Ra-228	1.000E+00	3.352E-01	8.154E-01	1.210E+00	8.381E-01	8.014E-02	1.623E-05	4.531E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.819E+00	1.266E+00	6.132E-01	4.852E-02	3.453E-05	3.322E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	1.401E-02	8.596E-02	3.414E-01	1.270E+00	2.068E+00	2.136E+00	2.105E+00	1.999E+00	
Th-228	äDOSE(j)		2.168E+00	2.167E+00	2.165E+00	2.157E+00	2.148E+00	2.136E+00	2.105E+00	1.999E+00	
Th-232	Th-232	1.000E+00	3.635E-01	3.635E-01	3.634E-01	3.632E-01	3.627E-01	3.608E-01	3.555E-01	3.377E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.14 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
=====				
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
=====				
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
=====				
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
=====				
D-34	Food transfer factors:			
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
=====				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
=====				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
=====				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
=====				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
=====				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

=====

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

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

	User	Used by RESRAD	Parameter		
Menu	Input	Default (If different from user input)	Name		
XX					
R011	Area of contaminated zone (m**2)	3.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCHZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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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

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)	5.000E-02	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

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

[illegible]

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3000.00 square meters	Ra-228 1.000E+00
Thickness: 1.50 meters	Th-228 1.000E+00
Cover Depth: 0.00 meters	Th-232 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.884E+00	3.882E+00	3.878E+00	3.866E+00	3.852E+00	3.831E+00	3.775E+00	3.585E+00
M(t):	1.554E-01	1.553E-01	1.551E-01	1.546E-01	1.541E-01	1.532E-01	1.510E-01	1.434E-01

Maximum TDOSE(t): 3.884E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.504E+00	0.3872	1.355E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-02	0.0032
Th-228	1.789E+00	0.4606	6.749E-02	0.0174	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.644E-03	0.0015
Th-232	8.610E-02	0.0222	3.826E-01	0.0985	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-02	0.0060
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.379E+00	0.8700	4.637E-01	0.1194	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.144E-02	0.0107

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.530E+00	0.3938
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	1.862E+00	0.4795
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	4.922E-01	0.1267
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.884E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.842E+00	0.4744	3.124E-02	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E-02	0.0032
Th-228	1.245E+00	0.3208	4.697E-02	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.929E-03	0.0010
Th-232	2.901E-01	0.0747	3.854E-01	0.0993	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.496E-02	0.0064
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.377E+00	0.8699	4.636E-01	0.1194	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-02	0.0107

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.886E+00	0.4857
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	1.296E+00	0.3339
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	7.005E-01	0.1804
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.882E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.006E+00	0.5173	4.569E-02	0.0118	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-02	0.0030
Th-228	6.033E-01	0.1555	2.275E-02	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.903E-03	0.0005
Th-232	7.640E-01	0.1970	3.950E-01	0.1019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.789E-02	0.0072
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.373E+00	0.8698	4.635E-01	0.1195	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-02	0.0107

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.063E+00	0.5321
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	6.279E-01	0.1619
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	1.187E+00	0.3060
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.878E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3000 SM TH-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.173E+00	0.3034	3.143E-02	0.0081	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.954E-03	0.0015
Th-228	4.773E-02	0.0123	1.800E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.506E-04	0.0000
Th-232	2.141E+00	0.5538	4.297E-01	0.1112	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-02	0.0091
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.362E+00	0.8696	4.630E-01	0.1198	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-02	0.0107

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.210E+00	0.3130
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	4.968E-02	0.0129
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	2.606E+00	0.6741
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.866E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.095E-01	0.0284	3.003E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.439E-04	0.0001
Th-228	3.397E-05	0.0000	1.281E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-07	0.0000
Th-232	3.239E+00	0.8409	4.591E-01	0.1192	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-02	0.0106
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.349E+00	0.8693	4.621E-01	0.1200	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.122E-02	0.0107

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.131E-01	0.0293
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	3.536E-05	0.0000
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	3.739E+00	0.9706
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.852E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.217E-05	0.0000	6.080E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-07	0.0000
Th-228	3.268E-16	0.0000	1.233E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-18	0.0000
Th-232	3.330E+00	0.8693	4.597E-01	0.1200	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-02	0.0107
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.330E+00	0.8693	4.597E-01	0.1200	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-02	0.0107

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.289E-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	3.401E-16	0.0000
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	3.831E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.831E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	6.190E-16	0.0000	1.698E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-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	0.000E+00	0.0000
Th-232	3.282E+00	0.8693	4.529E-01	0.1200	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-02	0.0107
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.282E+00	0.8693	4.529E-01	0.1200	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-02	0.0107

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	6.390E-16	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-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	3.775E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.775E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU1 Model AF 3000 SM TH-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	3.117E+00	0.8693	4.302E-01	0.1200	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-02	0.0107
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.117E+00	0.8693	4.302E-01	0.1200	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-02	0.0107

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	3.585E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.585E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	1.187E+00	1.051E+00	8.241E-01	3.520E-01	3.099E-02	6.270E-06	1.751E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	3.432E-01	8.350E-01	1.239E+00	8.582E-01	8.206E-02	1.662E-05	4.640E-16	0.000E+00
Ra-228+D	äDSR(j)		1.530E+00	1.886E+00	2.063E+00	1.210E+00	1.131E-01	2.289E-05	6.390E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.862E+00	1.296E+00	6.279E-01	4.968E-02	3.536E-05	3.401E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	4.049E-01	4.048E-01	4.048E-01	4.046E-01	4.040E-01	4.019E-01	3.960E-01	3.761E-01
Th-232	Ra-228+D	1.000E+00	7.296E-02	2.076E-01	4.325E-01	9.004E-01	1.217E+00	1.242E+00	1.223E+00	1.162E+00
Th-232	Th-228+D	1.000E+00	1.435E-02	8.802E-02	3.496E-01	1.301E+00	2.117E+00	2.188E+00	2.156E+00	2.047E+00
Th-232	äDSR(j)		4.922E-01	7.005E-01	1.187E+00	2.606E+00	3.739E+00	3.831E+00	3.775E+00	3.585E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.634E+01	1.326E+01	1.212E+01	2.066E+01	2.211E+02	1.092E+06	*2.726E+14	*2.726E+14	
Th-228	1.342E+01	1.929E+01	3.981E+01	5.032E+02	7.070E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	5.080E+01	3.569E+01	2.106E+01	9.593E+00	6.687E+00	6.525E+00	6.622E+00	6.973E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.727 ñ 0.005	2.067E+00	1.210E+01	1.530E+00	1.634E+01
Th-228	1.000E+00	0.000E+00	1.862E+00	1.342E+01	1.862E+00	1.342E+01
Th-232	1.000E+00	61.8 ñ 0.1	3.840E+00	6.511E+00	4.922E-01	5.080E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.187E+00	1.051E+00	8.241E-01	3.520E-01	3.099E-02	6.270E-06	1.751E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	7.296E-02	2.076E-01	4.325E-01	9.004E-01	1.217E+00	1.242E+00	1.223E+00	1.162E+00	
Ra-228	äDOSE(j)		1.259E+00	1.258E+00	1.257E+00	1.252E+00	1.248E+00	1.242E+00	1.223E+00	1.162E+00	
Th-228	Ra-228	1.000E+00	3.432E-01	8.350E-01	1.239E+00	8.582E-01	8.206E-02	1.662E-05	4.640E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.862E+00	1.296E+00	6.279E-01	4.968E-02	3.536E-05	3.401E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	1.435E-02	8.802E-02	3.496E-01	1.301E+00	2.117E+00	2.188E+00	2.156E+00	2.047E+00	
Th-228	äDOSE(j)		2.220E+00	2.219E+00	2.217E+00	2.209E+00	2.200E+00	2.188E+00	2.156E+00	2.047E+00	
Th-232	Th-232	1.000E+00	4.049E-01	4.048E-01	4.048E-01	4.046E-01	4.040E-01	4.019E-01	3.960E-01	3.761E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.21 seconds

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Dose Conversion Factor (and Related) Parameter Summary ...	2
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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU1 Model AF 10000 SM TH-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
=====				
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
=====				
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
=====				
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
=====				
D-34	Food transfer factors:			
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(1,3)
=====				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(2,3)
=====				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
=====				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
=====				
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
=====				
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

=====

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

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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
R011	Area of contaminated zone (m**2)	1.000E+04	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	SUBMFRACT
R011	Length parallel to aquifer flow (m)	not used	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	BRDL
R011	Time since placement of material (yr)	0.000E+00	TI
R011	Times for calculations (yr)	1.000E+00	T(2)
R011	Times for calculations (yr)	3.000E+00	T(3)
R011	Times for calculations (yr)	1.000E+01	T(4)
R011	Times for calculations (yr)	3.000E+01	T(5)
R011	Times for calculations (yr)	1.000E+02	T(6)
R011	Times for calculations (yr)	3.000E+02	T(7)
R011	Times for calculations (yr)	1.000E+03	T(8)
R011	Times for calculations (yr)	not used	T(9)
R011	Times for calculations (yr)	not used	T(10)
R012	Initial principal radionuclide (pCi/g): Ra-228	1.000E+00	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	W1(3)
R013	Cover depth (m)	0.000E+00	COVER0
R013	Density of cover material (g/cm**3)	not used	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	VCV
R013	Density of contaminated zone (g/cm**3)	1.330E+00	DENSCH
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	VCE
R013	Contaminated zone total porosity	5.000E-01	TPCZ
R013	Contaminated zone field capacity	2.000E-01	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	HCCZ
R013	Contaminated zone b parameter	4.900E+00	BCE
R013	Average annual wind speed (m/sec)	2.000E+00	WIND
R013	Humidity in air (g/m**3)	not used	HUMID
R013	Evapotranspiration coefficient	4.950E-01	EVPCTR
R013	Precipitation (m/yr)	9.510E-01	PRECIP
R013	Irrigation (m/yr)	2.000E-01	RI
R013	Irrigation mode	overhead	IDITCH
R013	Runoff coefficient	2.000E-01	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	not used	WAREA
R013	Accuracy for water/soil computations	not used	EPS
R014	Density of saturated zone (g/cm**3)	not used	DENSAQ
R014	Saturated zone total porosity	not used	TPSZ
R014	Saturated zone effective porosity	not used	EPST
R014	Saturated zone field capacity	not used	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	not used	HCSZ
R014	Saturated zone hydraulic gradient	not used	HGWT
R014	Saturated zone b parameter	not used	BSZ
R014	Water table drop rate (m/yr)	not used	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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 Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	not used	7.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	not used	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	not used	6.000E+04	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	not used	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU1 Model AF 10000 SM TH-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU1 10000 SM TH-232.RAD

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

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)	5.000E-02	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

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

[illegible]

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 10000.00 square meters	Ra-228 1.000E+00
Thickness: 1.50 meters	Th-228 1.000E+00
Cover Depth: 0.00 meters	Th-232 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.040E+00	4.038E+00	4.034E+00	4.021E+00	4.007E+00	3.985E+00	3.927E+00	3.729E+00
M(t):	1.616E-01	1.615E-01	1.614E-01	1.608E-01	1.603E-01	1.594E-01	1.571E-01	1.492E-01

Maximum TDOSE(t): 4.040E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.547E+00	0.3830	1.534E-02	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.234E-02	0.0031
Th-228	1.838E+00	0.4549	7.641E-02	0.0189	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.644E-03	0.0014
Th-232	8.859E-02	0.0219	4.332E-01	0.1072	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-02	0.0058
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.474E+00	0.8598	5.249E-01	0.1299	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.144E-02	0.0103

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.575E+00	0.3898
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	1.920E+00	0.4752
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	5.452E-01	0.1350
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.040E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.894E+00	0.4691	3.537E-02	0.0088	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.254E-02	0.0031
Th-228	1.279E+00	0.3168	5.318E-02	0.0132	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.929E-03	0.0010
Th-232	2.985E-01	0.0739	4.363E-01	0.1081	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.496E-02	0.0062
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.472E+00	0.8598	5.249E-01	0.1300	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.143E-02	0.0103

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.942E+00	0.4810
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	1.336E+00	0.3309
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	7.598E-01	0.1881
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.038E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.062E+00	0.5113	5.173E-02	0.0128	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.161E-02	0.0029
Th-228	6.197E-01	0.1536	2.576E-02	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.903E-03	0.0005
Th-232	7.857E-01	0.1948	4.472E-01	0.1109	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.789E-02	0.0069
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.468E+00	0.8597	5.247E-01	0.1301	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.140E-02	0.0103

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.126E+00	0.5270
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	6.473E-01	0.1605
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	1.261E+00	0.3125
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.034E+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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.205E+00	0.2998	3.558E-02	0.0088	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.954E-03	0.0015
Th-228	4.903E-02	0.0122	2.038E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.506E-04	0.0000
Th-232	2.201E+00	0.5474	4.865E-01	0.1210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.522E-02	0.0088
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.456E+00	0.8594	5.242E-01	0.1304	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.133E-02	0.0103

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.247E+00	0.3101
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	5.122E-02	0.0127
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	2.723E+00	0.6772
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.021E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.125E-01	0.0281	3.400E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.439E-04	0.0001
Th-228	3.490E-05	0.0000	1.451E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.072E-07	0.0000
Th-232	3.330E+00	0.8310	5.197E-01	0.1297	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.068E-02	0.0102
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.442E+00	0.8591	5.231E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.122E-02	0.0103

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.165E-01	0.0291
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	3.645E-05	0.0000
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	3.890E+00	0.9709
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.007E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.278E-05	0.0000	6.884E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-07	0.0000
Th-228	3.357E-16	0.0000	1.396E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-18	0.0000
Th-232	3.424E+00	0.8591	5.204E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-02	0.0103
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.424E+00	0.8591	5.204E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.101E-02	0.0103

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.358E-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	3.507E-16	0.0000
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	3.985E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.985E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	6.362E-16	0.0000	1.922E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.074E-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	0.000E+00	0.0000
Th-232	3.374E+00	0.8591	5.128E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-02	0.0103
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.374E+00	0.8591	5.128E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.041E-02	0.0103

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	6.585E-16	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-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	3.927E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.927E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-232	3.204E+00	0.8591	4.870E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-02	0.0103
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.204E+00	0.8591	4.870E-01	0.1306	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.838E-02	0.0103

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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-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-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	3.729E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.729E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	1.221E+00	1.081E+00	8.481E-01	3.623E-01	3.189E-02	6.453E-06	1.802E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	3.538E-01	8.608E-01	1.278E+00	8.847E-01	8.460E-02	1.713E-05	4.783E-16	0.000E+00
Ra-228+D	äDSR(j)		1.575E+00	1.942E+00	2.126E+00	1.247E+00	1.165E-01	2.358E-05	6.585E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.920E+00	1.336E+00	6.473E-01	5.122E-02	3.645E-05	3.507E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	4.554E-01	4.553E-01	4.553E-01	4.550E-01	4.544E-01	4.520E-01	4.454E-01	4.230E-01
Th-232	Ra-228+D	1.000E+00	7.509E-02	2.137E-01	4.451E-01	9.267E-01	1.253E+00	1.278E+00	1.259E+00	1.196E+00
Th-232	Th-228+D	1.000E+00	1.479E-02	9.074E-02	3.604E-01	1.341E+00	2.183E+00	2.255E+00	2.222E+00	2.110E+00
Th-232	äDSR(j)		5.452E-01	7.598E-01	1.261E+00	2.723E+00	3.890E+00	3.985E+00	3.927E+00	3.729E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.587E+01	1.287E+01	1.176E+01	2.005E+01	2.146E+02	1.060E+06	*2.726E+14	*2.726E+14	
Th-228	1.302E+01	1.871E+01	3.862E+01	4.881E+02	6.858E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	4.585E+01	3.291E+01	1.983E+01	9.181E+00	6.427E+00	6.273E+00	6.367E+00	6.704E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	2.729 ñ 0.005	2.129E+00	1.174E+01	1.575E+00	1.587E+01
Th-228	1.000E+00	0.000E+00	1.920E+00	1.302E+01	1.920E+00	1.302E+01
Th-232	1.000E+00	61.9 ñ 0.1	3.994E+00	6.260E+00	5.452E-01	4.585E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.221E+00	1.081E+00	8.481E-01	3.623E-01	3.189E-02	6.453E-06	1.802E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	7.509E-02	2.137E-01	4.451E-01	9.267E-01	1.253E+00	1.278E+00	1.259E+00	1.196E+00	
Ra-228	äDOSE(j)		1.296E+00	1.295E+00	1.293E+00	1.289E+00	1.285E+00	1.278E+00	1.259E+00	1.196E+00	
Th-228	Ra-228	1.000E+00	3.538E-01	8.608E-01	1.278E+00	8.847E-01	8.460E-02	1.713E-05	4.783E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.920E+00	1.336E+00	6.473E-01	5.122E-02	3.645E-05	3.507E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	1.479E-02	9.074E-02	3.604E-01	1.341E+00	2.183E+00	2.255E+00	2.222E+00	2.110E+00	
Th-228	äDOSE(j)		2.289E+00	2.288E+00	2.285E+00	2.277E+00	2.268E+00	2.255E+00	2.222E+00	2.110E+00	
Th-232	Th-232	1.000E+00	4.554E-01	4.553E-01	4.553E-01	4.550E-01	4.544E-01	4.520E-01	4.454E-01	4.230E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.C.EXE execution time = 1.21 seconds

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Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
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Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Current	Base	Parameter
Menu	Value#	Case*	Name
AA			
D-1	Th-230	5.480E-04	DCF3(6)
D-1	U-234	2.830E-04	DCF3(7)
D-1	U-235+D	2.673E-04	DCF3(8)
D-1	U-238	2.550E-04	DCF3(9)
D-1	U-238+D	2.687E-04	DCF3(10)
D-34	Food transfer factors:		
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	2.000E-05	RTF(1,3)
D-34			
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	RTF(2,3)
D-34			
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	RTF(3,3)
D-34			
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	RTF(4,3)
D-34			
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	RTF(5,3)
D-34			
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	RTF(6,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	RTF(6,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	RTF(6,3)
D-34			
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	RTF(7,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	3.400E-04	RTF(7,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	6.000E-04	RTF(7,3)
D-34			
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	RTF(8,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	3.400E-04	RTF(8,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	6.000E-04	RTF(8,3)
D-34			
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	RTF(9,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	3.400E-04	RTF(9,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	6.000E-04	RTF(9,3)
D-34			
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	RTF(10,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	3.400E-04	RTF(10,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	6.000E-04	RTF(10,3)
D-5	Bioaccumulation factors, fresh water, L/kg:		
D-5	Ac-227+D , fish	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	BIOFAC(1,2)

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210, fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210, crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OUI Model AF 1 SM Total U

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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)	1.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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 Harshaw OUI Model AF 1 SM Total U

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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)	5.000E-02	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 Harshaw OUI Model AF 1 SM Total U

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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

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 Harshaw OUI Model AF 1 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
U-234	5.484E-06	0.0004	6.326E-03	0.4381	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-06	0.0001
U-235	4.292E-04	0.0297	2.713E-04	0.0188	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.966E-08	0.0000
U-238	1.749E-03	0.1211	5.657E-03	0.3917	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-06	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.184E-03	0.1512	1.225E-02	0.8486	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.276E-06	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
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	6.333E-03	0.4385
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	7.006E-04	0.0485
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	7.407E-03	0.5129
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.444E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	5.391E-06	0.0004	6.219E-03	0.4381	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-06	0.0001
U-235	4.220E-04	0.0297	2.667E-04	0.0188	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-08	0.0000
U-238	1.720E-03	0.1211	5.561E-03	0.3917	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.066E-06	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.147E-03	0.1512	1.205E-02	0.8486	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.237E-06	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.225E-03	0.4385
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	6.887E-04	0.0485
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	7.281E-03	0.5129
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.420E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM TOTAL U.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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	5.212E-06	0.0004	6.010E-03	0.4381	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-06	0.0001
U-235	4.078E-04	0.0297	2.579E-04	0.0188	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.730E-08	0.0000
U-238	1.662E-03	0.1211	5.374E-03	0.3917	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-06	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.075E-03	0.1512	1.164E-02	0.8486	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.162E-06	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.016E-03	0.4385
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	6.657E-04	0.0485
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	7.036E-03	0.5129
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.372E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM TOTAL U.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+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.
U-234	4.647E-06	0.0004	5.332E-03	0.4381	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.624E-07	0.0001
U-235	3.618E-04	0.0297	2.296E-04	0.0189	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.230E-08	0.0000
U-238	1.474E-03	0.1211	4.767E-03	0.3917	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.137E-07	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.840E-03	0.1512	1.033E-02	0.8486	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E-06	0.0002

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+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.
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	5.338E-03	0.4386
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	5.914E-04	0.0486
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	6.242E-03	0.5129
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.217E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM TOTAL U.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	3.471E-06	0.0004	3.789E-03	0.4381	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.837E-07	0.0001
U-235	2.571E-04	0.0297	1.661E-04	0.0192	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-08	0.0000
U-238	1.047E-03	0.1210	3.385E-03	0.3914	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.488E-07	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.307E-03	0.1512	7.340E-03	0.8487	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-06	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	3.793E-03	0.4385
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	4.232E-04	0.0489
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	4.433E-03	0.5125
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	8.649E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
U-234	2.398E-06	0.0009	1.149E-03	0.4375	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-07	0.0001
U-235	7.815E-05	0.0298	5.865E-05	0.0223	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-08	0.0000
U-238	3.159E-04	0.1203	1.022E-03	0.3891	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E-07	0.0001
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.964E-04	0.1510	2.229E-03	0.8489	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.150E-07	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
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	1.151E-03	0.4384
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	1.368E-04	0.0521
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	1.338E-03	0.5095
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.626E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM TOTAL U.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	5.726E-06	0.0545	4.535E-05	0.4316	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.230E-09	0.0001
U-235	2.920E-06	0.0278	7.414E-06	0.0706	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-09	0.0000
U-238	1.030E-05	0.0980	3.334E-05	0.3173	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.389E-09	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.895E-05	0.1803	8.610E-05	0.8195	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-08	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.108E-05	0.4862
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	1.034E-05	0.0984
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	4.364E-05	0.4154
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.051E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 1 SM TOTAL U.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.
U-234	1.409E-05	0.6364	7.829E-06	0.3536	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-09	0.0002
U-235	1.352E-08	0.0006	2.000E-07	0.0090	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.641E-11	0.0000
U-238	2.329E-09	0.0001	1.511E-09	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.114E-13	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.410E-05	0.6371	8.030E-06	0.3627	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.825E-09	0.0002

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.
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	2.192E-05	0.9902
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	2.136E-07	0.0096
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	3.840E-09	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.214E-05	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
U-234	U-234	1.000E+00	1.295E-02	1.273E-02	1.230E-02	1.091E-02	7.749E-03	2.338E-03	7.618E-05	4.759E-10
U-234	Th-230	1.000E+00	1.444E-07	4.298E-07	9.863E-07	2.790E-06	6.891E-06	1.385E-05	1.653E-05	1.569E-05
U-234	Ra-226+D	1.000E+00	1.641E-10	1.143E-09	5.968E-09	5.117E-08	3.835E-07	2.873E-06	1.166E-05	2.888E-05
U-234	Pb-210+D	1.000E+00	7.844E-15	1.164E-13	1.324E-12	3.214E-11	6.149E-10	1.031E-08	5.979E-08	1.633E-07
U-234	Po-210	1.000E+00	1.312E-15	3.181E-14	5.240E-13	1.657E-11	3.494E-10	6.072E-09	3.551E-08	9.717E-08
U-234	äDSR(j)		1.295E-02	1.273E-02	1.230E-02	1.092E-02	7.756E-03	2.355E-03	1.045E-04	4.483E-05
U-235+D	U-235+D	1.000E+00	3.113E-02	3.061E-02	2.958E-02	2.624E-02	1.863E-02	5.622E-03	1.833E-04	1.147E-09
U-235+D	Pa-231	1.000E+00	1.379E-06	4.096E-06	9.354E-06	2.600E-05	6.094E-05	9.846E-05	5.123E-05	1.744E-06
U-235+D	Ac-227+D	1.000E+00	7.889E-08	5.420E-07	2.746E-06	2.115E-05	1.181E-04	3.603E-04	2.248E-04	7.746E-06
U-235+D	äDSR(j)		3.114E-02	3.061E-02	2.959E-02	2.628E-02	1.881E-02	6.081E-03	4.594E-04	9.491E-06
U-238	U-238	5.400E-05	6.248E-07	6.142E-07	5.935E-07	5.265E-07	3.739E-07	1.128E-07	3.679E-09	2.302E-14
U-238+D	U-238+D	9.999E-01	1.515E-02	1.489E-02	1.439E-02	1.276E-02	9.064E-03	2.735E-03	8.918E-05	5.582E-10
U-238+D	U-234	9.999E-01	1.830E-08	5.408E-08	1.220E-07	3.248E-07	6.700E-07	6.661E-07	6.492E-08	1.352E-12
U-238+D	Th-230	9.999E-01	1.360E-13	9.430E-13	4.875E-12	4.031E-11	2.722E-10	1.436E-09	2.666E-09	2.612E-09
U-238+D	Ra-226+D	9.999E-01	1.160E-16	1.727E-15	1.981E-14	4.940E-13	1.017E-11	2.069E-10	1.525E-09	4.640E-09
U-238+D	Pb-210+D	9.999E-01	4.443E-21	1.361E-19	3.340E-18	2.374E-16	1.290E-14	6.436E-13	7.545E-12	2.619E-11
U-238+D	Po-210	9.999E-01	6.430E-22	3.264E-20	1.197E-18	1.171E-16	7.210E-15	3.772E-13	4.478E-12	1.558E-11
U-238+D	äDSR(j)		1.515E-02	1.489E-02	1.439E-02	1.276E-02	9.065E-03	2.736E-03	8.925E-05	7.853E-09

U-238+D U-238+D U-238+D U-238+D U-238+D U-238+D U-238+D U-238+D U-238+D U-238+D U-238+D
The DSR includes contributions from associated (half-life > 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.930E+03	1.964E+03	2.032E+03	2.290E+03	3.223E+03	1.062E+04	2.393E+05	5.577E+05
U-235	8.029E+02	8.167E+02	8.449E+02	9.512E+02	1.329E+03	4.111E+03	5.442E+04	*2.161E+06
U-238	1.650E+03	1.679E+03	1.737E+03	1.959E+03	2.758E+03	9.138E+03	2.801E+05	*3.361E+05

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 = 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)
U-234	4.890E-01	0.000E+00	1.295E-02	1.930E+03	1.295E-02	1.930E+03
U-235	2.250E-02	0.000E+00	3.114E-02	8.029E+02	3.114E-02	8.029E+02
U-238	4.890E-01	0.000E+00	1.515E-02	1.650E+03	1.515E-02	1.650E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	6.333E-03	6.225E-03	6.016E-03	5.336E-03	3.789E-03	1.143E-03	3.725E-05	2.327E-10		
U-234	U-238	9.999E-01	8.950E-09	2.645E-08	5.966E-08	1.588E-07	3.276E-07	3.257E-07	3.175E-08	6.609E-13		
U-234	äDOSE(j)		6.333E-03	6.225E-03	6.016E-03	5.336E-03	3.790E-03	1.143E-03	3.728E-05	2.334E-10		
Th-230	U-234	1.000E+00	7.060E-08	2.102E-07	4.823E-07	1.364E-06	3.369E-06	6.775E-06	8.082E-06	7.674E-06		
Th-230	U-238	9.999E-01	6.652E-14	4.611E-13	2.384E-12	1.971E-11	1.331E-10	7.023E-10	1.304E-09	1.277E-09		
Th-230	äDOSE(j)		7.060E-08	2.102E-07	4.823E-07	1.364E-06	3.370E-06	6.775E-06	8.084E-06	7.675E-06		
Ra-226	U-234	1.000E+00	8.025E-11	5.588E-10	2.919E-09	2.502E-08	1.875E-07	1.405E-06	5.702E-06	1.412E-05		
Ra-226	U-238	9.999E-01	5.673E-17	8.446E-16	9.687E-15	2.416E-13	4.971E-12	1.012E-10	7.457E-10	2.269E-09		
Ra-226	äDOSE(j)		8.025E-11	5.588E-10	2.919E-09	2.502E-08	1.875E-07	1.405E-06	5.703E-06	1.412E-05		
Pb-210	U-234	1.000E+00	3.835E-15	5.690E-14	6.476E-13	1.571E-11	3.007E-10	5.043E-09	2.924E-08	7.985E-08		
Pb-210	U-238	9.999E-01	2.172E-21	6.655E-20	1.633E-18	1.161E-16	6.308E-15	3.147E-13	3.690E-12	1.281E-11		
Pb-210	äDOSE(j)		3.835E-15	5.690E-14	6.476E-13	1.571E-11	3.007E-10	5.043E-09	2.924E-08	7.987E-08		
Po-210	U-234	1.000E+00	6.417E-16	1.556E-14	2.562E-13	8.101E-12	1.709E-10	2.969E-09	1.737E-08	4.752E-08		
Po-210	U-238	9.999E-01	3.144E-22	1.596E-20	5.855E-19	5.725E-17	3.526E-15	1.845E-13	2.190E-12	7.620E-12		
Po-210	äDOSE(j)		6.417E-16	1.556E-14	2.562E-13	8.101E-12	1.709E-10	2.969E-09	1.737E-08	4.753E-08		
U-235	U-235	1.000E+00	7.005E-04	6.886E-04	6.655E-04	5.903E-04	4.192E-04	1.265E-04	4.124E-06	2.581E-11		
Pa-231	U-235	1.000E+00	3.102E-08	9.216E-08	2.105E-07	5.851E-07	1.371E-06	2.215E-06	1.153E-06	3.924E-08		
Ac-227	U-235	1.000E+00	1.775E-09	1.219E-08	6.179E-08	4.759E-07	2.656E-06	8.107E-06	5.059E-06	1.743E-07		
U-238	U-238	5.400E-05	3.055E-07	3.003E-07	2.902E-07	2.575E-07	1.828E-07	5.517E-08	1.799E-09	1.126E-14		
U-238	U-238	9.999E-01	7.407E-03	7.281E-03	7.036E-03	6.242E-03	4.432E-03	1.337E-03	4.361E-05	2.729E-10		
U-238	äDOSE(j)		7.407E-03	7.281E-03	7.036E-03	6.242E-03	4.432E-03	1.337E-03	4.361E-05	2.730E-10		
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.67 seconds

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OUI Model AF 3 SM Total U

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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)	3.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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)	5.000E-02	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

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.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 Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.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.
U-234	1.146E-05	0.0006	7.134E-03	0.3837	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.426E-06	0.0002
U-235	9.292E-04	0.0500	3.059E-04	0.0165	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.490E-07	0.0000
U-238	3.828E-03	0.2059	6.379E-03	0.3431	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.253E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.769E-03	0.2565	1.382E-02	0.7432	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.827E-06	0.0004

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.
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	7.148E-03	0.3845
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	1.235E-03	0.0664
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	1.021E-02	0.5491
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.859E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.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.
U-234	1.127E-05	0.0006	7.013E-03	0.3837	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.368E-06	0.0002
U-235	9.134E-04	0.0500	3.008E-04	0.0165	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.466E-07	0.0000
U-238	3.763E-03	0.2059	6.271E-03	0.3431	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.197E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	4.688E-03	0.2565	1.358E-02	0.7432	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.711E-06	0.0004

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.
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	7.027E-03	0.3845
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	1.214E-03	0.0664
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	1.004E-02	0.5491
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.828E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
U-234	1.089E-05	0.0006	6.777E-03	0.3837	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.254E-06	0.0002
U-235	8.827E-04	0.0500	2.908E-04	0.0165	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.419E-07	0.0000
U-238	3.637E-03	0.2059	6.060E-03	0.3430	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.090E-06	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.530E-03	0.2565	1.313E-02	0.7432	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.486E-06	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
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	6.791E-03	0.3845
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	1.174E-03	0.0664
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	9.699E-03	0.5491
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	1.766E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	9.714E-06	0.0006	6.013E-03	0.3837	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.887E-06	0.0002
U-235	7.831E-04	0.0500	2.589E-04	0.0165	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-07	0.0000
U-238	3.226E-03	0.2058	5.375E-03	0.3430	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.741E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.019E-03	0.2564	1.165E-02	0.7432	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.755E-06	0.0004

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.025E-03	0.3845
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	1.042E-03	0.0665
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	8.604E-03	0.5490
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.567E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	7.280E-06	0.0007	4.272E-03	0.3836	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E-06	0.0002
U-235	5.565E-04	0.0500	1.873E-04	0.0168	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-08	0.0000
U-238	2.291E-03	0.2057	3.817E-03	0.3428	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.855E-03	0.2563	8.277E-03	0.7433	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.091E-06	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	4.281E-03	0.3845
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	7.439E-04	0.0668
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	6.110E-03	0.5487
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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-02	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.
U-234	5.208E-06	0.0015	1.295E-03	0.3832	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-07	0.0002
U-235	1.692E-04	0.0500	6.614E-05	0.0196	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.555E-08	0.0000
U-238	6.912E-04	0.2045	1.152E-03	0.3408	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.875E-07	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	8.656E-04	0.2561	2.514E-03	0.7436	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E-06	0.0004

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.
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	1.301E-03	0.3849
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	2.354E-04	0.0696
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	1.844E-03	0.5455
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.381E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 3 SM TOTAL U.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.277E-05	0.0920	5.114E-05	0.3685	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-08	0.0002
U-235	6.323E-06	0.0456	8.360E-06	0.0602	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.816E-09	0.0000
U-238	2.254E-05	0.1624	3.759E-05	0.2709	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.917E-08	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.163E-05	0.3000	9.709E-05	0.6996	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.268E-08	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.393E-05	0.4607
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	1.469E-05	0.1059
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	6.015E-05	0.4335
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.388E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3 SM Total U

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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.
U-234	3.142E-05	0.7754	8.828E-06	0.2178	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.430E-08	0.0004
U-235	2.938E-08	0.0007	2.255E-07	0.0056	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-10	0.0000
U-238	5.191E-09	0.0001	1.704E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.434E-12	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.146E-05	0.7762	9.055E-06	0.2234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.447E-08	0.0004

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.
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	4.027E-05	0.9935
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	2.550E-07	0.0063
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	6.897E-09	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.053E-05	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
U-234	U-234	1.000E+00	1.462E-02	1.437E-02	1.389E-02	1.232E-02	8.747E-03	2.639E-03	8.599E-05	5.372E-10
U-234	Th-230	1.000E+00	1.630E-07	4.852E-07	1.113E-06	3.149E-06	7.779E-06	1.564E-05	1.866E-05	1.772E-05
U-234	Ra-226+D	1.000E+00	3.655E-10	2.545E-09	1.329E-08	1.140E-07	8.540E-07	6.399E-06	2.597E-05	6.430E-05
U-234	Pb-210+D	1.000E+00	1.005E-14	1.491E-13	1.697E-12	4.118E-11	7.880E-10	1.321E-08	7.662E-08	2.093E-07
U-234	Po-210	1.000E+00	1.523E-15	3.691E-14	6.080E-13	1.922E-11	4.054E-10	7.045E-09	4.120E-08	1.128E-07
U-234	äDSR(j)		1.462E-02	1.437E-02	1.389E-02	1.232E-02	8.756E-03	2.661E-03	1.307E-04	8.234E-05
U-235+D	U-235+D	1.000E+00	5.490E-02	5.397E-02	5.215E-02	4.626E-02	3.285E-02	9.913E-03	3.232E-04	2.023E-09
U-235+D	Pa-231	1.000E+00	1.608E-06	4.777E-06	1.091E-05	3.033E-05	7.107E-05	1.148E-04	5.974E-05	2.034E-06
U-235+D	Ac-227+D	1.000E+00	9.471E-08	6.507E-07	3.297E-06	2.539E-05	1.417E-04	4.326E-04	2.699E-04	9.299E-06
U-235+D	äDSR(j)		5.490E-02	5.397E-02	5.216E-02	4.632E-02	3.306E-02	1.046E-02	6.529E-04	1.134E-05
U-238	U-238	5.400E-05	7.049E-07	6.930E-07	6.696E-07	5.940E-07	4.218E-07	1.273E-07	4.150E-09	2.598E-14
U-238+D	U-238+D	9.999E-01	2.088E-02	2.052E-02	1.983E-02	1.759E-02	1.249E-02	3.770E-03	1.229E-04	7.694E-10
U-238+D	U-234	9.999E-01	2.066E-08	6.105E-08	1.377E-07	3.666E-07	7.563E-07	7.519E-07	7.328E-08	1.526E-12
U-238+D	Th-230	9.999E-01	1.536E-13	1.065E-12	5.504E-12	4.550E-11	3.073E-10	1.621E-09	3.010E-09	2.948E-09
U-238+D	Ra-226+D	9.999E-01	2.584E-16	3.846E-15	4.411E-14	1.100E-12	2.264E-11	4.608E-10	3.396E-09	1.033E-08
U-238+D	Pb-210+D	9.999E-01	5.693E-21	1.744E-19	4.280E-18	3.043E-16	1.653E-14	8.247E-13	9.669E-12	3.356E-11
U-238+D	Po-210	9.999E-01	7.461E-22	3.788E-20	1.389E-18	1.358E-16	8.365E-15	4.377E-13	5.196E-12	1.808E-11
U-238+D	äDSR(j)		2.088E-02	2.052E-02	1.983E-02	1.759E-02	1.249E-02	3.771E-03	1.230E-04	1.410E-08

The DSR includes contributions from associated (half-life ≥ 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.710E+03	1.740E+03	1.800E+03	2.029E+03	2.855E+03	9.395E+03	1.912E+05	3.036E+05
U-235	4.554E+02	4.632E+02	4.793E+02	5.398E+02	7.561E+02	2.390E+03	3.829E+04	*2.161E+06
U-238	1.197E+03	1.218E+03	1.260E+03	1.421E+03	2.001E+03	6.630E+03	2.032E+05	*3.361E+05

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 = 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)
U-234	4.890E-01	0.000E+00	1.462E-02	1.710E+03	1.462E-02	1.710E+03
U-235	2.250E-02	0.000E+00	5.490E-02	4.554E+02	5.490E-02	4.554E+02
U-238	4.890E-01	0.000E+00	2.088E-02	1.197E+03	2.088E-02	1.197E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	7.148E-03	7.027E-03	6.790E-03	6.024E-03	4.277E-03	1.290E-03	4.205E-05	2.627E-10	
U-234	U-238	9.999E-01	1.010E-08	2.985E-08	6.735E-08	1.793E-07	3.698E-07	3.677E-07	3.584E-08	7.461E-13	
U-234	äDOSE(j)		7.148E-03	7.027E-03	6.791E-03	6.024E-03	4.278E-03	1.291E-03	4.209E-05	2.634E-10	
Th-230	U-234	1.000E+00	7.970E-08	2.373E-07	5.444E-07	1.540E-06	3.804E-06	7.648E-06	9.124E-06	8.663E-06	
Th-230	U-238	9.999E-01	7.510E-14	5.206E-13	2.691E-12	2.225E-11	1.503E-10	7.928E-10	1.472E-09	1.442E-09	
Th-230	äDOSE(j)		7.970E-08	2.373E-07	5.444E-07	1.540E-06	3.804E-06	7.649E-06	9.126E-06	8.664E-06	
Ra-226	U-234	1.000E+00	1.787E-10	1.244E-09	6.499E-09	5.573E-08	4.176E-07	3.129E-06	1.270E-05	3.144E-05	
Ra-226	U-238	9.999E-01	1.263E-16	1.881E-15	2.157E-14	5.380E-13	1.107E-11	2.253E-10	1.661E-09	5.053E-09	
Ra-226	äDOSE(j)		1.787E-10	1.244E-09	6.499E-09	5.573E-08	4.176E-07	3.129E-06	1.270E-05	3.145E-05	
Pb-210	U-234	1.000E+00	4.915E-15	7.291E-14	8.298E-13	2.014E-11	3.853E-10	6.462E-09	3.747E-08	1.023E-07	
Pb-210	U-238	9.999E-01	2.784E-21	8.527E-20	2.093E-18	1.488E-16	8.083E-15	4.033E-13	4.728E-12	1.641E-11	
Pb-210	äDOSE(j)		4.915E-15	7.291E-14	8.298E-13	2.014E-11	3.853E-10	6.462E-09	3.747E-08	1.023E-07	
Po-210	U-234	1.000E+00	7.446E-16	1.805E-14	2.973E-13	9.400E-12	1.982E-10	3.445E-09	2.015E-08	5.513E-08	
Po-210	U-238	9.999E-01	3.648E-22	1.852E-20	6.794E-19	6.642E-17	4.091E-15	2.140E-13	2.541E-12	8.842E-12	
Po-210	äDOSE(j)		7.446E-16	1.805E-14	2.973E-13	9.400E-12	1.982E-10	3.445E-09	2.015E-08	5.514E-08	
U-235	U-235	1.000E+00	1.235E-03	1.214E-03	1.173E-03	1.041E-03	7.391E-04	2.230E-04	7.272E-06	4.552E-11	
Pa-231	U-235	1.000E+00	3.618E-08	1.075E-07	2.454E-07	6.823E-07	1.599E-06	2.584E-06	1.344E-06	4.577E-08	
Ac-227	U-235	1.000E+00	2.131E-09	1.464E-08	7.418E-08	5.713E-07	3.189E-06	9.733E-06	6.073E-06	2.092E-07	
U-238	U-238	5.400E-05	3.447E-07	3.389E-07	3.275E-07	2.905E-07	2.063E-07	6.224E-08	2.029E-09	1.270E-14	
U-238	U-238	9.999E-01	1.021E-02	1.004E-02	9.699E-03	8.604E-03	6.110E-03	1.844E-03	6.011E-05	3.762E-10	
U-238	äDOSE(j)		1.021E-02	1.004E-02	9.699E-03	8.604E-03	6.110E-03	1.844E-03	6.011E-05	3.763E-10	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.59 seconds

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[illegible]

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	5
Summary of Pathway Selections	10
Contaminated Zone and Total Dose Summary	11
Total Dose Components	
Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
Time = 3.000E+02	18
Time = 1.000E+03	19
Dose/Source Ratios Summed Over All Pathways	20
Single Radionuclide Soil Guidelines	20
Dose Per Nuclide Summed Over All Pathways	21
Soil Concentration Per Nuclide	22

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

		Current	Base	Parameter
Menu	Parameter	Value#	Case*	Name
XX				
D-1	Th-230	5.480E-04	5.480E-04	DCF3(6)
D-1	U-234	2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(8)
D-1	U-238	2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D	2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-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-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)

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OUI Model AF 10 SM Total U

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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)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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 Harshaw OUI Model AF 10 SM Total U

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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)	5.000E-02	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 Harshaw OUI Model AF 10 SM Total U

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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	---	REVS
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 : RESRAD Harshaw OUI Model AF 10 SM Total U

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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

Maximum TDOSE(t): 2.559E-02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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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.
U-234	2.313E-05	0.0009	8.131E-03	0.3177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-05	0.0004
U-235	1.906E-03	0.0745	3.487E-04	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.966E-07	0.0000
U-238	7.889E-03	0.3083	7.271E-03	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-05	0.0004
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	9.818E-03	0.3837	1.575E-02	0.6155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.276E-05	0.0009

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.
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	8.166E-03	0.3191
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	2.255E-03	0.0881
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	1.517E-02	0.5928
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.559E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 10 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	2.274E-05	0.0009	7.993E-03	0.3177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-05	0.0004
U-235	1.874E-03	0.0745	3.428E-04	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-07	0.0000
U-238	7.756E-03	0.3083	7.148E-03	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.066E-05	0.0004
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	9.652E-03	0.3836	1.548E-02	0.6155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.237E-05	0.0009

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.027E-03	0.3191
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	2.217E-03	0.0881
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	1.491E-02	0.5928
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.516E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 10 SM TOTAL U.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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	2.199E-05	0.0009	7.725E-03	0.3177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-05	0.0004
U-235	1.811E-03	0.0745	3.315E-04	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.730E-07	0.0000
U-238	7.495E-03	0.3083	6.907E-03	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-05	0.0004
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	9.327E-03	0.3836	1.496E-02	0.6155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.162E-05	0.0009

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	7.757E-03	0.3191
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	2.142E-03	0.0881
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	1.441E-02	0.5928
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.431E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 10 SM TOTAL U.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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.961E-05	0.0009	6.853E-03	0.3177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.624E-06	0.0004
U-235	1.606E-03	0.0745	2.951E-04	0.0137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.230E-07	0.0000
U-238	6.648E-03	0.3082	6.127E-03	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.137E-06	0.0004
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	8.274E-03	0.3836	1.328E-02	0.6155	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E-05	0.0009

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	6.883E-03	0.3191
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	1.902E-03	0.0882
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	1.278E-02	0.5927
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.157E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.472E-05	0.0010	4.870E-03	0.3177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.837E-06	0.0004
U-235	1.142E-03	0.0745	2.135E-04	0.0139	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-07	0.0000
U-238	4.721E-03	0.3081	4.351E-03	0.2839	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.488E-06	0.0004
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.877E-03	0.3835	9.434E-03	0.6156	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-05	0.0009

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	4.891E-03	0.3192
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	1.355E-03	0.0884
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	9.079E-03	0.5924
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.533E-02	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.
U-234	1.070E-05	0.0023	1.477E-03	0.3174	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-06	0.0004
U-235	3.470E-04	0.0746	7.539E-05	0.0162	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-07	0.0000
U-238	1.425E-03	0.3063	1.313E-03	0.2823	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E-06	0.0004
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.782E-03	0.3832	2.865E-03	0.6160	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.150E-06	0.0009

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.
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	1.489E-03	0.3202
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	4.225E-04	0.0908
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	2.740E-03	0.5890
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.652E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	2.652E-05	0.1348	5.829E-05	0.2962	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.230E-08	0.0005
U-235	1.297E-05	0.0659	9.530E-06	0.0484	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-08	0.0001
U-238	4.645E-05	0.2361	4.285E-05	0.2177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.389E-08	0.0003
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	8.595E-05	0.4367	1.107E-04	0.5624	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-07	0.0009

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.490E-05	0.4314
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	2.252E-05	0.1144
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	8.937E-05	0.4541
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.968E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
U-234	6.529E-05	0.8621	1.006E-05	0.1329	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-08	0.0006
U-235	6.036E-08	0.0008	2.570E-07	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.641E-10	0.0000
U-238	1.078E-08	0.0001	1.942E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.114E-12	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	6.536E-05	0.8631	1.032E-05	0.1363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.825E-08	0.0006

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
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	7.540E-05	0.9956
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	3.180E-07	0.0042
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	1.273E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	7.573E-05	1.0000

Sum of all water independent and dependent pathways.

[illegible][illegible]

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
U-234	4.890E-01	0.000E+00	1.670E-02	1.497E+03	1.670E-02	1.497E+03
U-235	2.250E-02	0.000E+00	1.002E-01	2.494E+02	1.002E-01	2.494E+02
U-238	4.890E-01	0.000E+00	3.102E-02	8.058E+02	3.102E-02	8.058E+02
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	8.166E-03	8.027E-03	7.757E-03	6.881E-03	4.886E-03	1.474E-03	4.803E-05	3.001E-10		
U-234	U-238	9.999E-01	1.154E-08	3.410E-08	7.693E-08	2.048E-07	4.224E-07	4.200E-07	4.094E-08	8.522E-13		
U-234	äDOSE(j)		8.166E-03	8.027E-03	7.757E-03	6.881E-03	4.886E-03	1.474E-03	4.808E-05	3.009E-10		
Th-230	U-234	1.000E+00	9.105E-08	2.711E-07	6.219E-07	1.759E-06	4.345E-06	8.737E-06	1.042E-05	9.896E-06		
Th-230	U-238	9.999E-01	8.579E-14	5.947E-13	3.074E-12	2.542E-11	1.717E-10	9.057E-10	1.681E-09	1.647E-09		
Th-230	äDOSE(j)		9.105E-08	2.711E-07	6.219E-07	1.759E-06	4.345E-06	8.738E-06	1.042E-05	9.898E-06		
Ra-226	U-234	1.000E+00	3.711E-10	2.584E-09	1.349E-08	1.157E-07	8.671E-07	6.497E-06	2.636E-05	6.529E-05		
Ra-226	U-238	9.999E-01	2.623E-16	3.905E-15	4.479E-14	1.117E-12	2.298E-11	4.678E-10	3.448E-09	1.049E-08		
Ra-226	äDOSE(j)		3.711E-10	2.584E-09	1.349E-08	1.157E-07	8.671E-07	6.497E-06	2.637E-05	6.530E-05		
Pb-210	U-234	1.000E+00	7.057E-15	1.047E-13	1.191E-12	2.891E-11	5.532E-10	9.278E-09	5.379E-08	1.469E-07		
Pb-210	U-238	9.999E-01	3.997E-21	1.224E-19	3.005E-18	2.136E-16	1.160E-14	5.790E-13	6.788E-12	2.356E-11		
Pb-210	äDOSE(j)		7.057E-15	1.047E-13	1.191E-12	2.891E-11	5.532E-10	9.278E-09	5.380E-08	1.469E-07		
Po-210	U-234	1.000E+00	9.210E-16	2.233E-14	3.677E-13	1.163E-11	2.452E-10	4.261E-09	2.492E-08	6.820E-08		
Po-210	U-238	9.999E-01	4.512E-22	2.291E-20	8.403E-19	8.216E-17	5.060E-15	2.647E-13	3.143E-12	1.094E-11		
Po-210	äDOSE(j)		9.210E-16	2.233E-14	3.677E-13	1.163E-11	2.452E-10	4.261E-09	2.492E-08	6.821E-08		
U-235	U-235	1.000E+00	2.255E-03	2.217E-03	2.142E-03	1.900E-03	1.349E-03	4.072E-04	1.328E-05	8.310E-11		
Pa-231	U-235	1.000E+00	4.358E-08	1.295E-07	2.956E-07	8.219E-07	1.926E-06	3.112E-06	1.619E-06	5.512E-08		
Ac-227	U-235	1.000E+00	2.676E-09	1.839E-08	9.316E-08	7.175E-07	4.005E-06	1.222E-05	7.627E-06	2.628E-07		
U-238	U-238	5.400E-05	3.934E-07	3.868E-07	3.737E-07	3.315E-07	2.354E-07	7.104E-08	2.316E-09	1.450E-14		
U-238	U-238	9.999E-01	1.517E-02	1.491E-02	1.441E-02	1.278E-02	9.078E-03	2.739E-03	8.932E-05	5.591E-10		
U-238	äDOSE(j)		1.517E-02	1.491E-02	1.441E-02	1.278E-02	9.078E-03	2.739E-03	8.932E-05	5.591E-10		
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THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Harshaw OUI Model AF 10 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.59 seconds

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Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
Time = 3.000E+02	18
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Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

		Current	Base	Parameter
Menu	Parameter	Value#	Case*	Name
XX				
D-1	Th-230	5.480E-04	5.480E-04	DCF3(6)
D-1	U-234	2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(8)
D-1	U-238	2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D	2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(4,3)
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	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	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	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	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	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-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)

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OUI Model AF 30 SM Total U

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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)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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)	5.000E-02	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

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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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 Harshaw OUI Model AF 30 SM Total U

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 30.00 square meters	U-234 4.890E-01
Thickness: 1.50 meters	U-235 2.250E-02
Cover Depth: 0.00 meters	U-238 4.890E-01

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)

XX

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.129E-02	3.076E-02	2.972E-02	2.637E-02	1.874E-02	5.687E-03	2.436E-04	1.026E-04
M(t):	1.252E-03	1.230E-03	1.189E-03	1.055E-03	7.495E-04	2.275E-04	9.744E-06	4.102E-06

Maximum TDOSE(t): 3.129E-02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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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.
U-234	3.100E-05	0.0010	9.156E-03	0.2926	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.426E-05	0.0011
U-235	2.598E-03	0.0830	3.926E-04	0.0125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.490E-06	0.0000
U-238	1.086E-02	0.3470	8.187E-03	0.2617	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.253E-05	0.0010
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.349E-02	0.4310	1.774E-02	0.5668	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.827E-05	0.0022

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.
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	9.221E-03	0.2947
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	2.992E-03	0.0956
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	1.908E-02	0.6097
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.129E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	3.048E-05	0.0010	9.001E-03	0.2926	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.368E-05	0.0011
U-235	2.554E-03	0.0830	3.860E-04	0.0126	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.466E-06	0.0000
U-238	1.067E-02	0.3470	8.048E-03	0.2617	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.197E-05	0.0010
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.326E-02	0.4310	1.743E-02	0.5668	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.711E-05	0.0022

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	9.065E-03	0.2947
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	2.941E-03	0.0956
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	1.875E-02	0.6097
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.076E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM TOTAL U.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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	2.947E-05	0.0010	8.698E-03	0.2926	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.254E-05	0.0011
U-235	2.468E-03	0.0830	3.733E-04	0.0126	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.419E-06	0.0000
U-238	1.031E-02	0.3470	7.777E-03	0.2616	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.090E-05	0.0010
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.281E-02	0.4310	1.685E-02	0.5668	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.486E-05	0.0022

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.760E-03	0.2947
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-03	0.0956
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	1.812E-02	0.6097
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.972E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM TOTAL U.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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
U-234	2.629E-05	0.0010	7.717E-03	0.2926	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.887E-05	0.0011
U-235	2.189E-03	0.0830	3.323E-04	0.0126	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-06	0.0000
U-238	9.149E-03	0.3469	6.899E-03	0.2616	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.741E-05	0.0010
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.136E-02	0.4310	1.495E-02	0.5669	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.755E-05	0.0022

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
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	7.772E-03	0.2947
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	2.523E-03	0.0957
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	1.608E-02	0.6096
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	2.637E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM TOTAL U.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.977E-05	0.0011	5.483E-03	0.2926	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E-05	0.0011
U-235	1.556E-03	0.0830	2.404E-04	0.0128	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-07	0.0000
U-238	6.497E-03	0.3467	4.900E-03	0.2615	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-05	0.0010
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	8.073E-03	0.4308	1.062E-02	0.5670	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.091E-05	0.0022

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.524E-03	0.2948
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	1.797E-03	0.0959
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	1.142E-02	0.6093
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.874E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.465E-05	0.0026	1.663E-03	0.2924	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-06	0.0011
U-235	4.730E-04	0.0832	8.489E-05	0.0149	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.555E-07	0.0001
U-238	1.960E-03	0.3447	1.479E-03	0.2600	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.875E-06	0.0010
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.448E-03	0.4305	3.226E-03	0.5673	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E-05	0.0022

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.683E-03	0.2960
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	5.583E-04	0.0982
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	3.445E-03	0.6058
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.687E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 30 SM TOTAL U.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
U-234	3.683E-05	0.1512	6.563E-05	0.2694	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-07	0.0011
U-235	1.769E-05	0.0726	1.073E-05	0.0441	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.816E-08	0.0002
U-238	6.393E-05	0.2624	4.825E-05	0.1981	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.917E-07	0.0008
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.185E-04	0.4863	1.246E-04	0.5116	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.268E-07	0.0022

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
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	1.027E-04	0.4218
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	2.848E-05	0.1169
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	1.124E-04	0.4613
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.436E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
U-234	9.069E-05	0.8843	1.133E-05	0.1105	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.430E-07	0.0014
U-235	8.262E-08	0.0008	2.894E-07	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-09	0.0000
U-238	1.498E-08	0.0001	2.187E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.434E-11	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	9.079E-05	0.8853	1.162E-05	0.1133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.447E-07	0.0014

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
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	1.022E-04	0.9962
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	3.737E-07	0.0036
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	1.719E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.026E-04	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
U-234	U-234	1.000E+00	1.886E-02	1.854E-02	1.791E-02	1.589E-02	1.128E-02	3.404E-03	1.109E-04	6.929E-10
U-234	Th-230	1.000E+00	2.102E-07	6.257E-07	1.436E-06	4.061E-06	1.003E-05	2.017E-05	2.406E-05	2.284E-05
U-234	Ra-226+D	1.000E+00	1.054E-09	7.339E-09	3.833E-08	3.287E-07	2.463E-06	1.845E-05	7.489E-05	1.855E-04
U-234	Pb-210+D	1.000E+00	2.121E-14	3.147E-13	3.582E-12	8.692E-11	1.663E-09	2.789E-08	1.617E-07	4.417E-07
U-234	Po-210	1.000E+00	2.534E-15	6.142E-14	1.012E-12	3.199E-11	6.746E-10	1.172E-08	6.856E-08	1.876E-07
U-234	äDSR(j)		1.886E-02	1.854E-02	1.791E-02	1.589E-02	1.130E-02	3.443E-03	2.101E-04	2.089E-04
U-235+D	U-235+D	1.000E+00	1.330E-01	1.307E-01	1.263E-01	1.121E-01	7.957E-02	2.401E-02	7.829E-04	4.900E-09
U-235+D	Pa-231	1.000E+00	2.252E-06	6.689E-06	1.528E-05	4.247E-05	9.952E-05	1.608E-04	8.366E-05	2.848E-06
U-235+D	Ac-227+D	1.000E+00	1.401E-07	9.626E-07	4.878E-06	3.757E-05	2.097E-04	6.400E-04	3.993E-04	1.376E-05
U-235+D	äDSR(j)		1.330E-01	1.307E-01	1.263E-01	1.121E-01	7.988E-02	2.481E-02	1.266E-03	1.661E-05
U-238	U-238	5.400E-05	9.082E-07	8.928E-07	8.628E-07	7.653E-07	5.435E-07	1.640E-07	5.347E-09	3.347E-14
U-238+D	U-238+D	9.999E-01	3.901E-02	3.835E-02	3.706E-02	3.287E-02	2.334E-02	7.044E-03	2.297E-04	1.438E-09
U-238+D	U-234	9.999E-01	2.665E-08	7.875E-08	1.777E-07	4.729E-07	9.755E-07	9.699E-07	9.453E-08	1.968E-12
U-238+D	Th-230	9.999E-01	1.980E-13	1.373E-12	7.097E-12	5.867E-11	3.963E-10	2.091E-09	3.881E-09	3.802E-09
U-238+D	Ra-226+D	9.999E-01	7.451E-16	1.109E-14	1.272E-13	3.173E-12	6.529E-11	1.329E-09	9.794E-09	2.980E-08
U-238+D	Pb-210+D	9.999E-01	1.202E-20	3.681E-19	9.033E-18	6.422E-16	3.489E-14	1.741E-12	2.041E-11	7.083E-11
U-238+D	Po-210	9.999E-01	1.241E-21	6.303E-20	2.312E-18	2.260E-16	1.392E-14	7.283E-13	8.646E-12	3.009E-11
U-238+D	äDSR(j)		3.901E-02	3.835E-02	3.706E-02	3.287E-02	2.335E-02	7.045E-03	2.298E-04	3.515E-08

The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.326E+03	1.349E+03	1.396E+03	1.573E+03	2.213E+03	7.262E+03	1.190E+05	1.197E+05	
U-235	1.880E+02	1.912E+02	1.979E+02	2.229E+02	3.130E+02	1.008E+03	1.975E+04	1.505E+06	
U-238	6.408E+02	6.519E+02	6.746E+02	7.605E+02	1.071E+03	3.548E+03	1.088E+05	*3.361E+05	

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 = 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)
U-234	4.890E-01	0.000E+00	1.886E-02	1.326E+03	1.886E-02	1.326E+03
U-235	2.250E-02	0.000E+00	1.330E-01	1.880E+02	1.330E-01	1.880E+02
U-238	4.890E-01	0.000E+00	3.901E-02	6.408E+02	3.901E-02	6.408E+02

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	9.221E-03	9.065E-03	8.759E-03	7.770E-03	5.517E-03	1.665E-03	5.424E-05	3.388E-10	
U-234	U-238	9.999E-01	1.303E-08	3.851E-08	8.687E-08	2.313E-07	4.770E-07	4.743E-07	4.623E-08	9.624E-13	
U-234	äDOSE(j)		9.221E-03	9.065E-03	8.759E-03	7.770E-03	5.518E-03	1.665E-03	5.429E-05	3.398E-10	
Th-230	U-234	1.000E+00	1.028E-07	3.060E-07	7.021E-07	1.986E-06	4.905E-06	9.862E-06	1.177E-05	1.117E-05	
Th-230	U-238	9.999E-01	9.684E-14	6.713E-13	3.471E-12	2.869E-11	1.938E-10	1.022E-09	1.898E-09	1.859E-09	
Th-230	äDOSE(j)		1.028E-07	3.060E-07	7.021E-07	1.986E-06	4.905E-06	9.863E-06	1.177E-05	1.117E-05	
Ra-226	U-234	1.000E+00	5.154E-10	3.589E-09	1.874E-08	1.607E-07	1.204E-06	9.024E-06	3.662E-05	9.069E-05	
Ra-226	U-238	9.999E-01	3.644E-16	5.424E-15	6.221E-14	1.552E-12	3.193E-11	6.498E-10	4.789E-09	1.457E-08	
Ra-226	äDOSE(j)		5.154E-10	3.589E-09	1.874E-08	1.607E-07	1.204E-06	9.025E-06	3.663E-05	9.070E-05	
Pb-210	U-234	1.000E+00	1.037E-14	1.539E-13	1.752E-12	4.250E-11	8.133E-10	1.364E-08	7.908E-08	2.160E-07	
Pb-210	U-238	9.999E-01	5.876E-21	1.800E-19	4.417E-18	3.140E-16	1.706E-14	8.512E-13	9.980E-12	3.464E-11	
Pb-210	äDOSE(j)		1.037E-14	1.539E-13	1.752E-12	4.250E-11	8.133E-10	1.364E-08	7.909E-08	2.160E-07	
Po-210	U-234	1.000E+00	1.239E-15	3.003E-14	4.947E-13	1.564E-11	3.299E-10	5.732E-09	3.353E-08	9.174E-08	
Po-210	U-238	9.999E-01	6.070E-22	3.082E-20	1.130E-18	1.105E-16	6.807E-15	3.562E-13	4.228E-12	1.471E-11	
Po-210	äDOSE(j)		1.239E-15	3.003E-14	4.947E-13	1.564E-11	3.299E-10	5.733E-09	3.353E-08	9.176E-08	
U-235	U-235	1.000E+00	2.992E-03	2.941E-03	2.842E-03	2.521E-03	1.790E-03	5.402E-04	1.761E-05	1.103E-10	
Pa-231	U-235	1.000E+00	5.066E-08	1.505E-07	3.437E-07	9.555E-07	2.239E-06	3.618E-06	1.882E-06	6.409E-08	
Ac-227	U-235	1.000E+00	3.153E-09	2.166E-08	1.097E-07	8.452E-07	4.718E-06	1.440E-05	8.985E-06	3.095E-07	
U-238	U-238	5.400E-05	4.441E-07	4.366E-07	4.219E-07	3.742E-07	2.658E-07	8.019E-08	2.615E-09	1.637E-14	
U-238	U-238	9.999E-01	1.908E-02	1.875E-02	1.812E-02	1.608E-02	1.142E-02	3.445E-03	1.123E-04	7.030E-10	
U-238	äDOSE(j)		1.908E-02	1.875E-02	1.812E-02	1.608E-02	1.142E-02	3.445E-03	1.123E-04	7.030E-10	
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THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Harshaw OUI Model AF 30 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.80 seconds

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Total Dose Components	
Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
Time = 3.000E+02	18
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Summary : RESRAD Harshaw OUI Model AF 100 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231	, plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34	Po-210	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210	, milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(4,3)
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	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	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	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	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	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-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)

Summary : RESRAD Harshaw OUI Model AF 100 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OUI Model AF 100 SM Total U

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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)	1.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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)	5.000E-02	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 Harshaw OUI Model AF 100 SM Total U

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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	---	EVSNI
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNI
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

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

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

Summary : RESRAD Harshaw OUI Model AF 100 SM Total U

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 100.00 square meters	U-234 4.890E-01
Thickness: 1.50 meters	U-235 2.250E-02
Cover Depth: 0.00 meters	U-238 4.890E-01

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)

XX

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.697E-02	3.634E-02	3.512E-02	3.116E-02	2.214E-02	6.718E-03	2.893E-04	1.259E-04
M(t):	1.479E-03	1.454E-03	1.405E-03	1.246E-03	8.854E-04	2.687E-04	1.157E-05	5.037E-06

Maximum TDOSE(t): 3.697E-02 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.
U-234	3.750E-05	0.0010	1.042E-02	0.2818	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-04	0.0031
U-235	3.180E-03	0.0860	4.467E-04	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.966E-06	0.0001
U-238	1.334E-02	0.3609	9.316E-03	0.2520	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-04	0.0029
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.656E-02	0.4479	2.018E-02	0.5459	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.276E-04	0.0062

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.
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	1.057E-02	0.2859
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	3.632E-03	0.0982
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	2.276E-02	0.6158
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.697E-02	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.
U-234	3.686E-05	0.0010	1.024E-02	0.2818	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-04	0.0031
U-235	3.126E-03	0.0860	4.393E-04	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-06	0.0001
U-238	1.311E-02	0.3609	9.158E-03	0.2520	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.066E-04	0.0029
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.628E-02	0.4479	1.984E-02	0.5459	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.237E-04	0.0062

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.
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	1.039E-02	0.2859
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	3.570E-03	0.0982
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	2.238E-02	0.6158
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.634E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 100 SM Total U

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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 = 3.000E+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.
U-234	3.564E-05	0.0010	9.897E-03	0.2818	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-04	0.0031
U-235	3.021E-03	0.0860	4.247E-04	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.730E-06	0.0001
U-238	1.267E-02	0.3609	8.850E-03	0.2520	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-04	0.0029
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.573E-02	0.4479	1.917E-02	0.5459	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.162E-04	0.0062

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.004E-02	0.2859
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	3.450E-03	0.0983
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	2.163E-02	0.6158
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.512E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 100 SM Total U

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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+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.
U-234	3.180E-05	0.0010	8.781E-03	0.2818	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.624E-05	0.0031
U-235	2.680E-03	0.0860	3.781E-04	0.0121	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.230E-06	0.0001
U-238	1.124E-02	0.3608	7.850E-03	0.2520	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.137E-05	0.0029
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.395E-02	0.4479	1.701E-02	0.5460	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E-04	0.0062

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+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.
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	8.909E-03	0.2860
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	3.062E-03	0.0983
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	1.918E-02	0.6158
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.116E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 100 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OUI 100 SM TOTAL U.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
U-234	2.395E-05	0.0011	6.239E-03	0.2819	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.837E-05	0.0031
U-235	1.905E-03	0.0860	2.735E-04	0.0124	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-06	0.0001
U-238	7.983E-03	0.3606	5.575E-03	0.2519	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.488E-05	0.0029
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	9.912E-03	0.4478	1.209E-02	0.5461	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-04	0.0062

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
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	6.331E-03	0.2860
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	2.181E-03	0.0985
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	1.362E-02	0.6154
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.214E-02	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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.796E-05	0.0027	1.892E-03	0.2816	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-05	0.0031
U-235	5.790E-04	0.0862	9.659E-05	0.0144	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-06	0.0002
U-238	2.409E-03	0.3586	1.683E-03	0.2505	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E-05	0.0029
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.006E-03	0.4474	3.671E-03	0.5464	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.150E-05	0.0062

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.930E-03	0.2873
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	6.768E-04	0.1007
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	4.111E-03	0.6119
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.718E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 100 SM Total U

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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 = 3.000E+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.
U-234	4.552E-05	0.1574	7.468E-05	0.2582	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.230E-07	0.0032
U-235	2.166E-05	0.0749	1.221E-05	0.0422	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-07	0.0007
U-238	7.855E-05	0.2715	5.490E-05	0.1898	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.389E-07	0.0022
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.457E-04	0.5038	1.418E-04	0.4902	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-06	0.0061

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.211E-04	0.4187
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	3.406E-05	0.1177
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	1.341E-04	0.4635
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.893E-04	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.
U-234	1.121E-04	0.8902	1.289E-05	0.1024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-07	0.0038
U-235	1.011E-07	0.0008	3.293E-07	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.641E-09	0.0000
U-238	1.851E-08	0.0001	2.488E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.114E-11	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.122E-04	0.8911	1.322E-05	0.1050	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.825E-07	0.0038

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.
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	1.255E-04	0.9964
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	4.361E-07	0.0035
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	2.107E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.259E-04	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	2.161E-02	2.125E-02	2.053E-02	1.821E-02	1.293E-02	3.902E-03	1.271E-04	7.943E-10	
U-234	Th-230	1.000E+00	2.406E-07	7.162E-07	1.643E-06	4.648E-06	1.148E-05	2.308E-05	2.754E-05	2.615E-05	
U-234	Ra-226+D	1.000E+00	1.303E-09	9.073E-09	4.739E-08	4.063E-07	3.045E-06	2.282E-05	9.259E-05	2.293E-04	
U-234	Pb-210+D	1.000E+00	3.922E-14	5.818E-13	6.622E-12	1.607E-10	3.075E-09	5.157E-08	2.990E-07	8.166E-07	
U-234	Po-210	1.000E+00	4.328E-15	1.049E-13	1.728E-12	5.464E-11	1.152E-09	2.003E-08	1.171E-07	3.205E-07	
U-234	äDSR(j)		2.161E-02	2.125E-02	2.053E-02	1.822E-02	1.295E-02	3.948E-03	2.477E-04	2.566E-04	
U-235+D	U-235+D	1.000E+00	1.614E-01	1.587E-01	1.533E-01	1.360E-01	9.658E-02	2.914E-02	9.503E-04	5.948E-09	
U-235+D	Pa-231	1.000E+00	2.649E-06	7.869E-06	1.797E-05	4.996E-05	1.171E-04	1.891E-04	9.842E-05	3.351E-06	
U-235+D	Ac-227+D	1.000E+00	1.632E-07	1.121E-06	5.682E-06	4.376E-05	2.443E-04	7.455E-04	4.652E-04	1.603E-05	
U-235+D	äDSR(j)		1.614E-01	1.587E-01	1.533E-01	1.361E-01	9.694E-02	3.008E-02	1.514E-03	1.938E-05	
U-238	U-238	5.400E-05	1.041E-06	1.023E-06	9.888E-07	8.772E-07	6.229E-07	1.880E-07	6.128E-09	3.836E-14	
U-238+D	U-238+D	9.999E-01	4.655E-02	4.576E-02	4.422E-02	3.923E-02	2.786E-02	8.406E-03	2.741E-04	1.716E-09	
U-238+D	U-234	9.999E-01	3.055E-08	9.026E-08	2.036E-07	5.421E-07	1.118E-06	1.112E-06	1.084E-07	2.256E-12	
U-238+D	Th-230	9.999E-01	2.267E-13	1.571E-12	8.123E-12	6.716E-11	4.536E-10	2.393E-09	4.442E-09	4.351E-09	
U-238+D	Ra-226+D	9.999E-01	9.212E-16	1.371E-14	1.573E-13	3.923E-12	8.072E-11	1.643E-09	1.211E-08	3.685E-08	
U-238+D	Pb-210+D	9.999E-01	2.222E-20	6.805E-19	1.670E-17	1.187E-15	6.450E-14	3.218E-12	3.773E-11	1.310E-10	
U-238+D	Po-210	9.999E-01	2.121E-21	1.077E-19	3.949E-18	3.861E-16	2.378E-14	1.244E-12	1.477E-11	5.140E-11	
U-238+D	äDSR(j)		4.655E-02	4.576E-02	4.422E-02	3.923E-02	2.786E-02	8.407E-03	2.742E-04	4.310E-08	

U-238+D äDSR(j) 4.655E-02 4.576E-02 4.422E-02 3.923E-02 2.786E-02 8.407E-03 2.742E-04 4.310E-08

The DSR includes contributions from associated (half-life > 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.157E+03	1.177E+03	1.217E+03	1.372E+03	1.931E+03	6.333E+03	1.009E+05	9.744E+04	
U-235	1.549E+02	1.576E+02	1.630E+02	1.837E+02	2.579E+02	8.311E+02	1.651E+04	1.290E+06	
U-238	5.370E+02	5.463E+02	5.653E+02	6.373E+02	8.974E+02	2.974E+03	9.117E+04	*3.361E+05	

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 = 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)
U-234	4.890E-01	0.000E+00	2.161E-02	1.157E+03	2.161E-02	1.157E+03
U-235	2.250E-02	0.000E+00	1.614E-01	1.549E+02	1.614E-01	1.549E+02
U-238	4.890E-01	0.000E+00	4.655E-02	5.370E+02	4.655E-02	5.370E+02

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		1.057E-02	1.039E-02	1.004E-02	8.907E-03	6.324E-03	1.908E-03	6.218E-05	3.884E-10	
U-234	U-238	9.999E-01		1.494E-08	4.414E-08	9.958E-08	2.651E-07	5.468E-07	5.437E-07	5.299E-08	1.103E-12	
U-234	äDOSE(j)			1.057E-02	1.039E-02	1.004E-02	8.907E-03	6.325E-03	1.909E-03	6.223E-05	3.895E-10	
Th-230	U-234	1.000E+00		1.176E-07	3.502E-07	8.035E-07	2.273E-06	5.614E-06	1.129E-05	1.347E-05	1.279E-05	
Th-230	U-238	9.999E-01		1.108E-13	7.683E-13	3.972E-12	3.284E-11	2.218E-10	1.170E-09	2.172E-09	2.128E-09	
Th-230	äDOSE(j)			1.176E-07	3.502E-07	8.036E-07	2.273E-06	5.614E-06	1.129E-05	1.347E-05	1.279E-05	
Ra-226	U-234	1.000E+00		6.372E-10	4.437E-09	2.317E-08	1.987E-07	1.489E-06	1.116E-05	4.528E-05	1.121E-04	
Ra-226	U-238	9.999E-01		4.505E-16	6.706E-15	7.691E-14	1.918E-12	3.947E-11	8.034E-10	5.921E-09	1.802E-08	
Ra-226	äDOSE(j)			6.372E-10	4.437E-09	2.317E-08	1.987E-07	1.489E-06	1.116E-05	4.528E-05	1.121E-04	
Pb-210	U-234	1.000E+00		1.918E-14	2.845E-13	3.238E-12	7.858E-11	1.504E-09	2.522E-08	1.462E-07	3.993E-07	
Pb-210	U-238	9.999E-01		1.086E-20	3.328E-19	8.166E-18	5.806E-16	3.154E-14	1.574E-12	1.845E-11	6.404E-11	
Pb-210	äDOSE(j)			1.918E-14	2.845E-13	3.238E-12	7.858E-11	1.504E-09	2.522E-08	1.462E-07	3.994E-07	
Po-210	U-234	1.000E+00		2.117E-15	5.131E-14	8.451E-13	2.672E-11	5.635E-10	9.793E-09	5.727E-08	1.567E-07	
Po-210	U-238	9.999E-01		1.037E-21	5.265E-20	1.931E-18	1.888E-16	1.163E-14	6.084E-13	7.223E-12	2.513E-11	
Po-210	äDOSE(j)			2.117E-15	5.131E-14	8.451E-13	2.672E-11	5.635E-10	9.793E-09	5.728E-08	1.568E-07	
U-235	U-235	1.000E+00		3.632E-03	3.570E-03	3.450E-03	3.060E-03	2.173E-03	6.557E-04	2.138E-05	1.338E-10	
Pa-231	U-235	1.000E+00		5.960E-08	1.771E-07	4.043E-07	1.124E-06	2.634E-06	4.256E-06	2.214E-06	7.539E-08	
Ac-227	U-235	1.000E+00		3.673E-09	2.523E-08	1.278E-07	9.846E-07	5.496E-06	1.677E-05	1.047E-05	3.606E-07	
U-238	U-238	5.400E-05		5.090E-07	5.004E-07	4.835E-07	4.289E-07	3.046E-07	9.191E-08	2.997E-09	1.876E-14	
U-238	U-238	9.999E-01		2.276E-02	2.238E-02	2.162E-02	1.918E-02	1.362E-02	4.111E-03	1.340E-04	8.389E-10	
U-238	äDOSE(j)			2.276E-02	2.238E-02	2.163E-02	1.918E-02	1.362E-02	4.111E-03	1.340E-04	8.389E-10	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.59 seconds

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

Dose Library: FGR 11

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

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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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)	3.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW
R015	Number of unsaturated zone strata	---	NS
R015	Unsat. zone 1, thickness (m)	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	---	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	---	DCNUCS(7)
R016	Leach rate (/yr)	1.712E-02	ALEACH(7)
R016	Solubility constant	not used	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	---	DCNUCS(8)
R016	Leach rate (/yr)	1.712E-02	ALEACH(8)
R016	Solubility constant	not used	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	---	DCNUCS(9)
R016	Leach rate (/yr)	1.712E-02	ALEACH(9)
R016	Solubility constant	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	---	DCNUCS(1)
R016	Leach rate (/yr)	1.203E-02	ALEACH(1)
R016	Solubility constant	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	---	DCNUCS(2)
R016	Leach rate (/yr)	4.844E-03	ALEACH(2)
R016	Solubility constant	not used	SOLUBK(2)

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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 Harshaw OUI Model AF 300 SM Total U

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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)	5.000E-02	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 Harshaw OUI Model AF 300 SM Total U

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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

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

[illegible]

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 300.00 square meters	U-234 4.890E-01
Thickness: 1.50 meters	U-235 2.250E-02
Cover Depth: 0.00 meters	U-238 4.890E-01

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)

XX

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.121E-02	4.052E-02	3.915E-02	3.474E-02	2.468E-02	7.491E-03	3.220E-04	1.379E-04
M(t):	1.649E-03	1.621E-03	1.566E-03	1.389E-03	9.872E-04	2.996E-04	1.288E-05	5.516E-06

Maximum TDOSE(t): 4.121E-02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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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.
U-234	3.993E-05	0.0010	1.171E-02	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.426E-04	0.0083
U-235	3.408E-03	0.0827	5.021E-04	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.490E-05	0.0004
U-238	1.440E-02	0.3494	1.047E-02	0.2541	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.253E-04	0.0079
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.785E-02	0.4331	2.268E-02	0.5504	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.827E-04	0.0166

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.
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	1.209E-02	0.2934
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	3.925E-03	0.0952
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	2.520E-02	0.6114
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.121E-02	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.
U-234	3.925E-05	0.0010	1.151E-02	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.368E-04	0.0083
U-235	3.350E-03	0.0827	4.937E-04	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.466E-05	0.0004
U-238	1.416E-02	0.3494	1.029E-02	0.2541	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.197E-04	0.0079
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.755E-02	0.4331	2.230E-02	0.5504	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.711E-04	0.0166

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.
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	1.189E-02	0.2934
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	3.858E-03	0.0952
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	2.477E-02	0.6114
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.052E-02	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 = 3.000E+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.
U-234	3.795E-05	0.0010	1.112E-02	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.254E-04	0.0083
U-235	3.237E-03	0.0827	4.774E-04	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.419E-05	0.0004
U-238	1.368E-02	0.3494	9.947E-03	0.2541	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.090E-04	0.0079
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.696E-02	0.4331	2.155E-02	0.5504	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.486E-04	0.0166

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.149E-02	0.2934
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	3.729E-03	0.0952
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	2.394E-02	0.6114
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.915E-02	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+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.
U-234	3.387E-05	0.0010	9.870E-03	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.887E-04	0.0083
U-235	2.872E-03	0.0827	4.249E-04	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.269E-05	0.0004
U-238	1.214E-02	0.3494	8.824E-03	0.2540	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.741E-04	0.0079
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.504E-02	0.4330	1.912E-02	0.5504	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.755E-04	0.0166

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+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.
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	1.019E-02	0.2934
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	3.310E-03	0.0953
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	2.123E-02	0.6113
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.474E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
U-234	2.553E-05	0.0010	7.013E-03	0.2841	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.051E-04	0.0083
U-235	2.041E-03	0.0827	3.075E-04	0.0125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.324E-06	0.0004
U-238	8.618E-03	0.3492	6.266E-03	0.2539	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-04	0.0079
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.068E-02	0.4329	1.359E-02	0.5505	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.091E-04	0.0166

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
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	7.243E-03	0.2935
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	2.358E-03	0.0955
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	1.508E-02	0.6110
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.468E-02	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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.934E-05	0.0026	2.126E-03	0.2839	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.220E-05	0.0083
U-235	6.205E-04	0.0828	1.086E-04	0.0145	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.555E-06	0.0005
U-238	2.600E-03	0.3471	1.891E-03	0.2525	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.875E-05	0.0078
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.240E-03	0.4326	4.126E-03	0.5508	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E-04	0.0166

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	2.208E-03	0.2947
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	7.327E-04	0.0978
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	4.550E-03	0.6075
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	7.491E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	4.932E-05	0.1532	8.394E-05	0.2607	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-06	0.0086
U-235	2.322E-05	0.0721	1.372E-05	0.0426	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.816E-07	0.0018
U-238	8.479E-05	0.2634	6.171E-05	0.1917	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.917E-06	0.0060
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.573E-04	0.4887	1.594E-04	0.4950	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.268E-06	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 = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.360E-04	0.4225
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	3.753E-05	0.1166
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	1.484E-04	0.4610
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.220E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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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.
U-234	1.215E-04	0.8808	1.449E-05	0.1051	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.430E-06	0.0104
U-235	1.088E-07	0.0008	3.702E-07	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.692E-08	0.0001
U-238	2.005E-08	0.0001	2.797E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.434E-10	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.216E-04	0.8817	1.486E-05	0.1078	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.447E-06	0.0105

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.
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	1.374E-04	0.9962
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	4.959E-07	0.0036
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	2.309E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.379E-04	1.0000

Sum of all water independent and dependent pathways.

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

[illegible]

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-234	4.890E-01	0.000E+00	2.473E-02	1.011E+03	2.473E-02	1.011E+03
U-235	2.250E-02	0.000E+00	1.744E-01	1.433E+02	1.744E-01	1.433E+02
U-238	4.890E-01	0.000E+00	5.153E-02	4.852E+02	5.153E-02	4.852E+02

Summary : RESRAD Harshaw OUI Model AF 300 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	1.209E-02	1.189E-02	1.149E-02	1.019E-02	7.235E-03	2.183E-03	7.113E-05	4.443E-10		
U-234	U-238	9.999E-01	1.709E-08	5.050E-08	1.139E-07	3.033E-07	6.256E-07	6.220E-07	6.062E-08	1.262E-12		
U-234	äDOSE(j)		1.209E-02	1.189E-02	1.149E-02	1.019E-02	7.236E-03	2.183E-03	7.119E-05	4.456E-10		
Th-230	U-234	1.000E+00	1.341E-07	3.991E-07	9.158E-07	2.590E-06	6.398E-06	1.286E-05	1.535E-05	1.457E-05		
Th-230	U-238	9.999E-01	1.263E-13	8.756E-13	4.527E-12	3.743E-11	2.528E-10	1.334E-09	2.476E-09	2.425E-09		
Th-230	äDOSE(j)		1.341E-07	3.991E-07	9.158E-07	2.590E-06	6.398E-06	1.287E-05	1.535E-05	1.457E-05		
Ra-226	U-234	1.000E+00	6.912E-10	4.813E-09	2.514E-08	2.155E-07	1.615E-06	1.210E-05	4.911E-05	1.216E-04		
Ra-226	U-238	9.999E-01	4.886E-16	7.274E-15	8.343E-14	2.081E-12	4.281E-11	8.714E-10	6.422E-09	1.954E-08		
Ra-226	äDOSE(j)		6.912E-10	4.813E-09	2.514E-08	2.155E-07	1.615E-06	1.210E-05	4.912E-05	1.216E-04		
Pb-210	U-234	1.000E+00	4.193E-14	6.220E-13	7.079E-12	1.718E-10	3.287E-09	5.513E-08	3.196E-07	8.730E-07		
Pb-210	U-238	9.999E-01	2.375E-20	7.275E-19	1.785E-17	1.269E-15	6.896E-14	3.440E-12	4.034E-11	1.400E-10		
Pb-210	äDOSE(j)		4.193E-14	6.220E-13	7.079E-12	1.718E-10	3.287E-09	5.513E-08	3.197E-07	8.731E-07		
Po-210	U-234	1.000E+00	4.391E-15	1.064E-13	1.753E-12	5.543E-11	1.169E-09	2.031E-08	1.188E-07	3.251E-07		
Po-210	U-238	9.999E-01	2.151E-21	1.092E-19	4.006E-18	3.917E-16	2.412E-14	1.262E-12	1.498E-11	5.214E-11		
Po-210	äDOSE(j)		4.391E-15	1.064E-13	1.753E-12	5.543E-11	1.169E-09	2.032E-08	1.188E-07	3.252E-07		
U-235	U-235	1.000E+00	3.925E-03	3.858E-03	3.728E-03	3.307E-03	2.349E-03	7.087E-04	2.311E-05	1.446E-10		
Pa-231	U-235	1.000E+00	7.050E-08	2.095E-07	4.783E-07	1.330E-06	3.116E-06	5.035E-06	2.620E-06	8.919E-08		
Ac-227	U-235	1.000E+00	4.141E-09	2.845E-08	1.441E-07	1.110E-06	6.197E-06	1.891E-05	1.180E-05	4.066E-07		
U-238	U-238	5.400E-05	5.825E-07	5.726E-07	5.533E-07	4.909E-07	3.486E-07	1.052E-07	3.429E-09	2.147E-14		
U-238	U-238	9.999E-01	2.520E-02	2.477E-02	2.394E-02	2.123E-02	1.508E-02	4.550E-03	1.483E-04	9.285E-10		
U-238	äDOSE(j)		2.520E-02	2.477E-02	2.394E-02	2.123E-02	1.508E-02	4.550E-03	1.483E-04	9.285E-10		
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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08	
U-234	U-238	9.999E-01		0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11	
U-234	äS(j):			4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08	
Th-230	U-234	1.000E+00		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04	
Th-230	U-238	9.999E-01		0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08	
Th-230	äS(j):			0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04	
Ra-226	U-234	1.000E+00		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05	
Ra-226	U-238	9.999E-01		0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09	
Ra-226	äS(j):			0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05	
Pb-210	U-234	1.000E+00		0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05	
Pb-210	U-238	9.999E-01		0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09	
Pb-210	äS(j):			0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05	
Po-210	U-234	1.000E+00		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05	
Po-210	U-238	9.999E-01		0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09	
Po-210	äS(j):			0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05	
U-235	U-235	1.000E+00		2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10	
Pa-231	U-235	1.000E+00		0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07	
Ac-227	U-235	1.000E+00		0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07	
U-238	U-238	5.400E-05		2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13	
U-238	U-238	9.999E-01		4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08	
U-238	äS(j):			4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08	
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.60 seconds

Summary : RESRAD Harshaw OUI Model AF 1000 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

Summary : RESRAD Harshaw OUI Model AF 1000 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OUI Model AF 1000 SM Total U

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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)	1.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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 draw rate (m/yr)	not used	1.000E-03	---	VWT

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

Summary : RESRAD Harshaw OUI Model AF 1000 SM Total U

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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 Harshaw OUI Model AF 1000 SM Total U

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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)	5.000E-02	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 Harshaw OUI Model AF 1000 SM Total U

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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	---	EVSNI
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNI
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

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

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

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.
U-234	4.121E-05	0.0009	1.329E-02	0.2849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-03	0.0245
U-235	3.526E-03	0.0756	5.701E-04	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.966E-05	0.0011
U-238	1.506E-02	0.3229	1.189E-02	0.2548	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-03	0.0232
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.863E-02	0.3993	2.575E-02	0.5519	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.276E-03	0.0488

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.
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	1.448E-02	0.3103
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	4.146E-03	0.0889
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	2.804E-02	0.6009
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.666E-02	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.
U-234	4.052E-05	0.0009	1.307E-02	0.2849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-03	0.0245
U-235	3.467E-03	0.0756	5.605E-04	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-05	0.0011
U-238	1.481E-02	0.3229	1.169E-02	0.2548	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.066E-03	0.0232
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.832E-02	0.3993	2.532E-02	0.5519	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.237E-03	0.0488

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.
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	1.423E-02	0.3103
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	4.076E-03	0.0889
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	2.756E-02	0.6009
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.587E-02	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 = 3.000E+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.
U-234	3.918E-05	0.0009	1.263E-02	0.2849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0245
U-235	3.350E-03	0.0756	5.420E-04	0.0122	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.730E-05	0.0011
U-238	1.431E-02	0.3228	1.129E-02	0.2548	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-03	0.0232
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.770E-02	0.3993	2.446E-02	0.5519	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.162E-03	0.0488

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.375E-02	0.3103
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	3.939E-03	0.0889
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-02	0.6008
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.433E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 1000 SM Total U

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	3.496E-05	0.0009	1.121E-02	0.2849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.624E-04	0.0245
U-235	2.972E-03	0.0756	4.824E-04	0.0123	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.230E-05	0.0011
U-238	1.269E-02	0.3228	1.002E-02	0.2547	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.137E-04	0.0232
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.570E-02	0.3993	2.171E-02	0.5519	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E-03	0.0488

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.220E-02	0.3103
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	3.497E-03	0.0889
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	2.363E-02	0.6008
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.933E-02	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 = 3.000E+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.
U-234	2.637E-05	0.0009	7.962E-03	0.2849	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.837E-04	0.0245
U-235	2.112E-03	0.0756	3.491E-04	0.0125	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-05	0.0011
U-238	9.015E-03	0.3226	7.114E-03	0.2546	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.488E-04	0.0232
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.115E-02	0.3992	1.543E-02	0.5520	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-03	0.0488

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.672E-03	0.3103
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-03	0.0892
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	1.678E-02	0.6005
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.794E-02	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.
U-234	2.016E-05	0.0024	2.414E-03	0.2846	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-04	0.0244
U-235	6.421E-04	0.0757	1.233E-04	0.0145	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-05	0.0014
U-238	2.720E-03	0.3207	2.147E-03	0.2531	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E-04	0.0231
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.383E-03	0.3988	4.685E-03	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.150E-04	0.0489

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.
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	2.642E-03	0.3114
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	7.772E-04	0.0916
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	5.063E-03	0.5969
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	8.482E-03	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 = 3.000E+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.
U-234	5.171E-05	0.1425	9.530E-05	0.2626	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.230E-06	0.0254
U-235	2.404E-05	0.0662	1.558E-05	0.0429	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-06	0.0053
U-238	8.870E-05	0.2444	7.006E-05	0.1930	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.389E-06	0.0176
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.645E-04	0.4531	1.809E-04	0.4985	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-05	0.0484

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.562E-04	0.4305
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	4.156E-05	0.1145
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	1.652E-04	0.4550
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.630E-04	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.
U-234	1.274E-04	0.8537	1.645E-05	0.1103	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-06	0.0320
U-235	1.131E-07	0.0008	4.203E-07	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.641E-08	0.0004
U-238	2.102E-08	0.0001	3.175E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.114E-10	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.275E-04	0.8546	1.688E-05	0.1131	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.825E-06	0.0323

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.
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	1.486E-04	0.9959
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	5.897E-07	0.0040
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	2.501E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.492E-04	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
U-234	U-234	1.000E+00	2.961E-02	2.910E-02	2.812E-02	2.495E-02	1.771E-02	5.344E-03	1.742E-04	1.088E-09
U-234	Th-230	1.000E+00	3.246E-07	9.664E-07	2.217E-06	6.272E-06	1.549E-05	3.115E-05	3.716E-05	3.528E-05
U-234	Ra-226+D	1.000E+00	1.487E-09	1.035E-08	5.408E-08	4.637E-07	3.475E-06	2.604E-05	1.057E-04	2.616E-04
U-234	Pb-210+D	1.000E+00	2.442E-13	3.623E-12	4.124E-11	1.001E-09	1.915E-08	3.211E-07	1.862E-06	5.085E-06
U-234	Po-210	1.000E+00	2.465E-14	5.976E-13	9.844E-12	3.112E-10	6.564E-09	1.141E-07	6.671E-07	1.826E-06
U-234	«DSR(j)		2.961E-02	2.910E-02	2.813E-02	2.495E-02	1.773E-02	5.402E-03	3.195E-04	3.038E-04
U-235+D	U-235+D	1.000E+00	1.843E-01	1.811E-01	1.750E-01	1.553E-01	1.103E-01	3.327E-02	1.085E-03	6.791E-09
U-235+D	Pa-231	1.000E+00	4.130E-06	1.227E-05	2.802E-05	7.790E-05	1.826E-04	2.949E-04	1.535E-04	5.225E-06
U-235+D	Ac-227+D	1.000E+00	2.137E-07	1.468E-06	7.438E-06	5.728E-05	3.198E-04	9.759E-04	6.089E-04	2.098E-05
U-235+D	«DSR(j)		1.843E-01	1.812E-01	1.751E-01	1.554E-01	1.108E-01	3.454E-02	1.847E-03	2.621E-05
U-238	U-238	5.400E-05	1.427E-06	1.403E-06	1.356E-06	1.203E-06	8.540E-07	2.577E-07	8.403E-09	5.259E-14
U-238+D	U-238+D	9.999E-01	5.733E-02	5.636E-02	5.446E-02	4.831E-02	3.431E-02	1.035E-02	3.376E-04	2.113E-09
U-238+D	U-234	9.999E-01	4.184E-08	1.236E-07	2.789E-07	7.425E-07	1.532E-06	1.523E-06	1.484E-07	3.090E-12
U-238+D	Th-230	9.999E-01	3.059E-13	2.120E-12	1.096E-11	9.062E-11	6.120E-10	3.229E-09	5.994E-09	5.872E-09
U-238+D	Ra-226+D	9.999E-01	1.051E-15	1.565E-14	1.795E-13	4.477E-12	9.211E-11	1.875E-09	1.382E-08	4.205E-08
U-238+D	Pb-210+D	9.999E-01	1.383E-19	4.238E-18	1.040E-16	7.394E-15	4.017E-13	2.004E-11	2.350E-10	8.155E-10
U-238+D	Po-210	9.999E-01	1.208E-20	6.133E-19	2.249E-17	2.199E-15	1.354E-13	7.087E-12	8.413E-11	2.927E-10
U-238+D	«DSR(j)		5.733E-02	5.636E-02	5.446E-02	4.831E-02	3.431E-02	1.035E-02	3.377E-04	5.114E-08

The DSR includes contributions from associated (half-life « 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	8.444E+02	8.590E+02	8.889E+02	1.002E+03	1.410E+03	4.628E+03	7.825E+04	8.228E+04	
U-235	1.357E+02	1.380E+02	1.428E+02	1.609E+02	2.257E+02	7.237E+02	1.353E+04	9.538E+05	
U-238	4.360E+02	4.436E+02	4.590E+02	5.174E+02	7.286E+02	2.414E+03	7.402E+04	*3.361E+05	

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 = 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)
U-234	4.890E-01	0.000E+00	2.961E-02	8.444E+02	2.961E-02	8.444E+02
U-235	2.250E-02	0.000E+00	1.843E-01	1.357E+02	1.843E-01	1.357E+02
U-238	4.890E-01	0.000E+00	5.734E-02	4.360E+02	5.734E-02	4.360E+02

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		1.448E-02	1.423E-02	1.375E-02	1.220E-02	8.663E-03	2.613E-03	8.516E-05	5.320E-10	
U-234	U-238	9.999E-01		2.046E-08	6.046E-08	1.364E-07	3.631E-07	7.490E-07	7.447E-07	7.258E-08	1.511E-12	
U-234	äDOSE(j)			1.448E-02	1.423E-02	1.375E-02	1.220E-02	8.663E-03	2.614E-03	8.524E-05	5.335E-10	
Th-230	U-234	1.000E+00		1.587E-07	4.726E-07	1.084E-06	3.067E-06	7.576E-06	1.523E-05	1.817E-05	1.725E-05	
Th-230	U-238	9.999E-01		1.496E-13	1.037E-12	5.360E-12	4.431E-11	2.993E-10	1.579E-09	2.931E-09	2.871E-09	
Th-230	äDOSE(j)			1.587E-07	4.726E-07	1.084E-06	3.067E-06	7.576E-06	1.523E-05	1.817E-05	1.726E-05	
Ra-226	U-234	1.000E+00		7.272E-10	5.063E-09	2.645E-08	2.267E-07	1.699E-06	1.273E-05	5.167E-05	1.279E-04	
Ra-226	U-238	9.999E-01		5.141E-16	7.653E-15	8.777E-14	2.189E-12	4.504E-11	9.168E-10	6.756E-09	2.056E-08	
Ra-226	äDOSE(j)			7.272E-10	5.063E-09	2.645E-08	2.267E-07	1.699E-06	1.273E-05	5.167E-05	1.280E-04	
Pb-210	U-234	1.000E+00		1.194E-13	1.772E-12	2.017E-11	4.894E-10	9.364E-09	1.570E-07	9.105E-07	2.487E-06	
Pb-210	U-238	9.999E-01		6.765E-20	2.072E-18	5.086E-17	3.616E-15	1.964E-13	9.800E-12	1.149E-10	3.988E-10	
Pb-210	äDOSE(j)			1.194E-13	1.772E-12	2.017E-11	4.894E-10	9.364E-09	1.570E-07	9.106E-07	2.487E-06	
Po-210	U-234	1.000E+00		1.206E-14	2.922E-13	4.814E-12	1.522E-10	3.210E-09	5.578E-08	3.262E-07	8.927E-07	
Po-210	U-238	9.999E-01		5.907E-21	2.999E-19	1.100E-17	1.075E-15	6.623E-14	3.466E-12	4.114E-11	1.432E-10	
Po-210	äDOSE(j)			1.206E-14	2.922E-13	4.814E-12	1.522E-10	3.210E-09	5.578E-08	3.263E-07	8.928E-07	
U-235	U-235	1.000E+00		4.146E-03	4.076E-03	3.939E-03	3.494E-03	2.481E-03	7.487E-04	2.441E-05	1.528E-10	
Pa-231	U-235	1.000E+00		9.293E-08	2.761E-07	6.305E-07	1.753E-06	4.108E-06	6.636E-06	3.453E-06	1.176E-07	
Ac-227	U-235	1.000E+00		4.807E-09	3.303E-08	1.673E-07	1.289E-06	7.194E-06	2.196E-05	1.370E-05	4.720E-07	
U-238	U-238	5.400E-05		6.979E-07	6.861E-07	6.630E-07	5.881E-07	4.176E-07	1.260E-07	4.109E-09	2.572E-14	
U-238	U-238	9.999E-01		2.804E-02	2.756E-02	2.663E-02	2.363E-02	1.678E-02	5.062E-03	1.651E-04	1.033E-09	
U-238	äDOSE(j)			2.804E-02	2.756E-02	2.663E-02	2.363E-02	1.678E-02	5.063E-03	1.651E-04	1.033E-09	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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

Summary : RESRAD Harshaw OUI Model AF 1000 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.63 seconds

Summary : RESRAD Harshaw OUI Model AF 3000 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

Summary : RESRAD Harshaw OUI Model AF 3000 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 ETEG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Harshaw OUI Model AF 3000 SM Total U

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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)	3.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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 draw rate (m/yr)	not used	1.000E-03	---	VWT

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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)	5.000E-02	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	---	EVSNI
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNI
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

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 Harshaw OUI Model AF 3000 SM Total U

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3000.00 square meters	U-234 4.890E-01
Thickness: 1.50 meters	U-235 2.250E-02
Cover Depth: 0.00 meters	U-238 4.890E-01

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)

XX

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.016E-02	4.931E-02	4.765E-02	4.228E-02	3.004E-02	9.119E-03	3.883E-04	1.539E-04
M(t):	2.007E-03	1.973E-03	1.906E-03	1.691E-03	1.202E-03	3.648E-04	1.553E-05	6.155E-06

Maximum TDOSE(t): 5.016E-02 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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
U-234	4.186E-05	0.0008	1.491E-02	0.2972	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-03	0.0228
U-235	3.584E-03	0.0714	6.393E-04	0.0127	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.966E-05	0.0010
U-238	1.538E-02	0.3067	1.333E-02	0.2658	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-03	0.0216
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.901E-02	0.3789	2.888E-02	0.5757	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.276E-03	0.0454

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
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	1.609E-02	0.3208
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	4.273E-03	0.0852
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	2.980E-02	0.5940
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.016E-02	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.
U-234	4.116E-05	0.0008	1.466E-02	0.2972	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-03	0.0228
U-235	3.523E-03	0.0714	6.286E-04	0.0127	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-05	0.0010
U-238	1.512E-02	0.3066	1.311E-02	0.2658	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.066E-03	0.0216
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.869E-02	0.3789	2.839E-02	0.5757	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.237E-03	0.0454

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.
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	1.582E-02	0.3208
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	4.200E-03	0.0852
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	2.929E-02	0.5940
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.931E-02	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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
U-234	3.980E-05	0.0008	1.416E-02	0.2972	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0228
U-235	3.404E-03	0.0714	6.078E-04	0.0128	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.730E-05	0.0010
U-238	1.461E-02	0.3066	1.266E-02	0.2658	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-03	0.0216
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.806E-02	0.3789	2.744E-02	0.5757	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.162E-03	0.0454

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
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	1.529E-02	0.3208
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	4.060E-03	0.0852
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	2.831E-02	0.5940
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.765E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OUI Model AF 3000 SM Total U

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	3.552E-05	0.0008	1.257E-02	0.2972	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.624E-04	0.0228
U-235	3.020E-03	0.0714	5.410E-04	0.0128	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.230E-05	0.0010
U-238	1.296E-02	0.3066	1.123E-02	0.2657	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.137E-04	0.0216
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.602E-02	0.3789	2.434E-02	0.5757	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E-03	0.0454

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.356E-02	0.3208
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	3.604E-03	0.0852
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	2.511E-02	0.5939
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.228E-02	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 = 3.000E+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.
U-234	2.680E-05	0.0009	8.929E-03	0.2972	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.837E-04	0.0228
U-235	2.146E-03	0.0715	3.914E-04	0.0130	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-05	0.0010
U-238	9.205E-03	0.3064	7.978E-03	0.2656	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.488E-04	0.0216
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.138E-02	0.3788	1.730E-02	0.5758	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-03	0.0454

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	9.639E-03	0.3209
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	2.569E-03	0.0855
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	1.783E-02	0.5936
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.004E-02	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.
U-234	2.054E-05	0.0023	2.707E-03	0.2969	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-04	0.0227
U-235	6.526E-04	0.0716	1.382E-04	0.0152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-05	0.0013
U-238	2.778E-03	0.3046	2.408E-03	0.2641	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E-04	0.0215
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.451E-03	0.3784	5.254E-03	0.5761	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.150E-04	0.0455

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.
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-03	0.3219
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	8.027E-04	0.0880
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	5.382E-03	0.5901
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	9.119E-03	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 = 3.000E+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.
U-234	5.278E-05	0.1359	1.069E-04	0.2753	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.230E-06	0.0238
U-235	2.445E-05	0.0630	1.747E-05	0.0450	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-06	0.0050
U-238	9.057E-05	0.2333	7.857E-05	0.2024	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.389E-06	0.0165
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.678E-04	0.4322	2.029E-04	0.5226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-05	0.0452

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.689E-04	0.4350
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	4.386E-05	0.1130
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	1.755E-04	0.4521
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.883E-04	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.
U-234	1.300E-04	0.8448	1.845E-05	0.1199	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-06	0.0310
U-235	1.153E-07	0.0007	4.713E-07	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.641E-08	0.0004
U-238	2.146E-08	0.0001	3.561E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.114E-10	0.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.301E-04	0.8457	1.892E-05	0.1230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.825E-06	0.0314

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.
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	1.532E-04	0.9957
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	6.430E-07	0.0042
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	2.583E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.539E-04	1.0000

Sum of all water independent and dependent pathways.

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

At specific activity limit

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
U-234	4.890E-01	0.000E+00	3.291E-02	7.597E+02	3.291E-02	7.597E+02
U-235	2.250E-02	0.000E+00	1.899E-01	1.317E+02	1.899E-01	1.317E+02
U-238	4.890E-01	0.000E+00	6.094E-02	4.103E+02	6.094E-02	4.103E+02
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		1.609E-02	1.582E-02	1.529E-02	1.356E-02	9.629E-03	2.905E-03	9.466E-05	5.913E-10	
U-234	U-238	9.999E-01		2.274E-08	6.720E-08	1.516E-07	4.036E-07	8.325E-07	8.277E-07	8.067E-08	1.680E-12	
U-234	äDOSE(j)			1.609E-02	1.582E-02	1.529E-02	1.356E-02	9.630E-03	2.906E-03	9.475E-05	5.930E-10	
Th-230	U-234	1.000E+00		1.767E-07	5.262E-07	1.207E-06	3.415E-06	8.435E-06	1.696E-05	2.023E-05	1.921E-05	
Th-230	U-238	9.999E-01		1.665E-13	1.154E-12	5.968E-12	4.934E-11	3.332E-10	1.758E-09	3.264E-09	3.197E-09	
Th-230	äDOSE(j)			1.767E-07	5.262E-07	1.207E-06	3.415E-06	8.435E-06	1.696E-05	2.024E-05	1.921E-05	
Ra-226	U-234	1.000E+00		7.422E-10	5.168E-09	2.699E-08	2.314E-07	1.734E-06	1.299E-05	5.274E-05	1.306E-04	
Ra-226	U-238	9.999E-01		5.247E-16	7.811E-15	8.958E-14	2.234E-12	4.597E-11	9.357E-10	6.896E-09	2.099E-08	
Ra-226	äDOSE(j)			7.422E-10	5.168E-09	2.699E-08	2.314E-07	1.734E-06	1.300E-05	5.274E-05	1.306E-04	
Pb-210	U-234	1.000E+00		1.204E-13	1.785E-12	2.032E-11	4.931E-10	9.436E-09	1.582E-07	9.175E-07	2.506E-06	
Pb-210	U-238	9.999E-01		6.817E-20	2.088E-18	5.125E-17	3.644E-15	1.979E-13	9.875E-12	1.158E-10	4.019E-10	
Pb-210	äDOSE(j)			1.204E-13	1.785E-12	2.032E-11	4.931E-10	9.436E-09	1.583E-07	9.176E-07	2.506E-06	
Po-210	U-234	1.000E+00		1.222E-14	2.961E-13	4.878E-12	1.542E-10	3.253E-09	5.652E-08	3.306E-07	9.046E-07	
Po-210	U-238	9.999E-01		5.986E-21	3.039E-19	1.115E-17	1.090E-15	6.712E-14	3.512E-12	4.169E-11	1.451E-10	
Po-210	äDOSE(j)			1.222E-14	2.961E-13	4.878E-12	1.542E-10	3.253E-09	5.653E-08	3.306E-07	9.047E-07	
U-235	U-235	1.000E+00		4.273E-03	4.200E-03	4.059E-03	3.600E-03	2.557E-03	7.715E-04	2.515E-05	1.574E-10	
Pa-231	U-235	1.000E+00		1.008E-07	2.993E-07	6.835E-07	1.900E-06	4.453E-06	7.195E-06	3.743E-06	1.274E-07	
Ac-227	U-235	1.000E+00		5.249E-09	3.606E-08	1.827E-07	1.407E-06	7.856E-06	2.397E-05	1.496E-05	5.154E-07	
U-238	U-238	5.400E-05		7.758E-07	7.627E-07	7.370E-07	6.538E-07	4.643E-07	1.401E-07	4.568E-09	2.859E-14	
U-238	U-238	9.999E-01		2.980E-02	2.929E-02	2.831E-02	2.511E-02	1.783E-02	5.381E-03	1.754E-04	1.098E-09	
U-238	äDOSE(j)			2.980E-02	2.929E-02	2.831E-02	2.511E-02	1.783E-02	5.381E-03	1.754E-04	1.098E-09	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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

Summary : RESRAD Harshaw OUI Model AF 3000 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
íííííííí	íííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí		

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

RESRAD.EXE execution time = 1.59 seconds

Summary : RESRAD Harshaw OUI Model AF 10000 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Current	Base	Parameter
Menu Parameter	Value#	Case*	Name
<div style="background-color:#cccccc; height:1px;"></div>			
D-1 Th-230	5.480E-04	5.480E-04	DCF3(6)
D-1 U-234	2.830E-04	2.830E-04	DCF3(7)
D-1 U-235+D	2.673E-04	2.660E-04	DCF3(8)
D-1 U-238	2.550E-04	2.550E-04	DCF3(9)
D-1 U-238+D	2.687E-04	2.550E-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 Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34 Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34 Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34			
D-34 Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34 Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34 Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34			
D-34 Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34 Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34 Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-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-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)

Summary : RESRAD Harshaw OUI Model AF 10000 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 ETEG table in Ground Pathway of Detailed Report.
*Base Case means Default.Lib w/o Associate Nuclide contributions.

Summary : RESRAD Harshaw OUI Model AF 10000 SM Total U

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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)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-05	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-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

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
R014	Well pump intake depth (m below water table)	not used	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	UW
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	4.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	HCUZ(1)
R016	Distribution coefficients for U-234		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(7,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	ALEACH(7)
R016	Solubility constant	0.000E+00	SOLUBK(7)
R016	Distribution coefficients for U-235		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(8,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	ALEACH(8)
R016	Solubility constant	0.000E+00	SOLUBK(8)
R016	Distribution coefficients for U-238		
R016	Contaminated zone (cm**3/g)	1.400E+01	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(9,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	ALEACH(9)
R016	Solubility constant	0.000E+00	SOLUBK(9)
R016	Distribution coefficients for daughter Ac-227		
R016	Contaminated zone (cm**3/g)	2.000E+01	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Pa-231		
R016	Contaminated zone (cm**3/g)	5.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	not used	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	not used	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)

Summary : RESRAD Harshaw OUI Model AF 10000 SM Total U

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+02	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	not used	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	not used	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+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	9.605E-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)	3.300E+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	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	1.139E+04	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	6.000E-04	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	4.000E-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)	2.280E-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 Harshaw OUI Model AF 10000 SM Total U

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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)	5.000E-02	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 Harshaw OUI Model AF 10000 SM Total U

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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	---	EVSNI
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNI
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

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 Harshaw OUI Model AF 10000 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
U-234	4.282E-05	0.0008	1.688E-02	0.3097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.142E-03	0.0209
U-235	3.669E-03	0.0673	7.238E-04	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.966E-05	0.0009
U-238	1.582E-02	0.2902	1.509E-02	0.2769	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.084E-03	0.0199
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.953E-02	0.3584	3.270E-02	0.5999	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.276E-03	0.0418

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
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	1.806E-02	0.3314
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	4.443E-03	0.0815
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	3.200E-02	0.5871
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	5.451E-02	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.
U-234	4.210E-05	0.0008	1.659E-02	0.3097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.123E-03	0.0209
U-235	3.607E-03	0.0673	7.117E-04	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.886E-05	0.0009
U-238	1.555E-02	0.2902	1.484E-02	0.2769	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.066E-03	0.0199
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.920E-02	0.3584	3.214E-02	0.5999	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.237E-03	0.0418

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.
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	1.776E-02	0.3314
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	4.368E-03	0.0815
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	3.145E-02	0.5871
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.358E-02	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 = 3.000E+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.
U-234	4.071E-05	0.0008	1.604E-02	0.3097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0209
U-235	3.486E-03	0.0673	6.882E-04	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.730E-05	0.0009
U-238	1.503E-02	0.2902	1.434E-02	0.2769	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-03	0.0199
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.855E-02	0.3583	3.106E-02	0.5999	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.162E-03	0.0418

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.716E-02	0.3314
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	4.221E-03	0.0815
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	3.040E-02	0.5870
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.178E-02	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+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.
U-234	3.633E-05	0.0008	1.423E-02	0.3097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.624E-04	0.0209
U-235	3.093E-03	0.0673	6.125E-04	0.0133	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.230E-05	0.0009
U-238	1.333E-02	0.2902	1.272E-02	0.2769	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.137E-04	0.0199
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.646E-02	0.3583	2.756E-02	0.5999	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.918E-03	0.0418

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+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.
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	1.523E-02	0.3314
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	3.748E-03	0.0816
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	2.696E-02	0.5870
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.594E-02	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 = 3.000E+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.
U-234	2.742E-05	0.0008	1.011E-02	0.3097	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.837E-04	0.0209
U-235	2.198E-03	0.0673	4.432E-04	0.0136	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.108E-05	0.0010
U-238	9.467E-03	0.2900	9.033E-03	0.2767	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.488E-04	0.0199
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.169E-02	0.3582	1.959E-02	0.6000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-03	0.0418

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.082E-02	0.3315
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	2.672E-03	0.0819
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	1.915E-02	0.5866
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.264E-02	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.
U-234	2.108E-05	0.0021	3.065E-03	0.3093	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.073E-04	0.0209
U-235	6.682E-04	0.0674	1.565E-04	0.0158	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-05	0.0012
U-238	2.857E-03	0.2883	2.726E-03	0.2751	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.958E-04	0.0198
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.546E-03	0.3579	5.948E-03	0.6003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.150E-04	0.0419

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.
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	3.294E-03	0.3324
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	8.366E-04	0.0844
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	5.779E-03	0.5832
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	9.909E-03	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 = 3.000E+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.
U-234	5.426E-05	0.1293	1.210E-04	0.2883	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.230E-06	0.0220
U-235	2.504E-05	0.0597	1.978E-05	0.0471	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.939E-06	0.0046
U-238	9.315E-05	0.2219	8.895E-05	0.2119	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.389E-06	0.0152
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.725E-04	0.4109	2.297E-04	0.5473	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.756E-05	0.0418

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.845E-04	0.4395
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	4.676E-05	0.1114
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	1.885E-04	0.4491
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.197E-04	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.
U-234	1.337E-04	0.8351	2.089E-05	0.1305	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.768E-06	0.0298
U-235	1.184E-07	0.0007	5.336E-07	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.641E-08	0.0004
U-238	2.206E-08	0.0001	4.032E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.114E-10	0.0000
Total	1.338E-04	0.8360	2.143E-05	0.1339	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.825E-06	0.0301

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.
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	1.593E-04	0.9954
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	7.084E-07	0.0044
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	2.690E-08	0.0002
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	1.600E-04	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
U-234	U-234	1.000E+00	3.694E-02	3.631E-02	3.509E-02	3.113E-02	2.210E-02	6.669E-03	2.173E-04	1.357E-09	
U-234	Th-230	1.000E+00	4.064E-07	1.210E-06	2.776E-06	7.852E-06	1.940E-05	3.900E-05	4.652E-05	4.417E-05	
U-234	Ra-226+D	1.000E+00	1.560E-09	1.087E-08	5.675E-08	4.866E-07	3.646E-06	2.732E-05	1.109E-04	2.746E-04	
U-234	Pb-210+D	1.000E+00	2.484E-13	3.686E-12	4.195E-11	1.018E-09	1.948E-08	3.266E-07	1.894E-06	5.173E-06	
U-234	Po-210	1.000E+00	2.539E-14	6.153E-13	1.014E-11	3.205E-10	6.758E-09	1.174E-07	6.869E-07	1.880E-06	
U-234	äDSR(j)		3.694E-02	3.632E-02	3.509E-02	3.114E-02	2.213E-02	6.735E-03	3.773E-04	3.258E-04	
U-235+D	U-235+D	1.000E+00	1.975E-01	1.941E-01	1.876E-01	1.664E-01	1.182E-01	3.566E-02	1.163E-03	7.277E-09	
U-235+D	Pa-231	1.000E+00	4.903E-06	1.457E-05	3.327E-05	9.248E-05	2.167E-04	3.502E-04	1.822E-04	6.203E-06	
U-235+D	Ac-227+D	1.000E+00	2.574E-07	1.769E-06	8.961E-06	6.902E-05	3.853E-04	1.176E-03	7.336E-04	2.528E-05	
U-235+D	äDSR(j)		1.975E-01	1.941E-01	1.876E-01	1.666E-01	1.188E-01	3.718E-02	2.078E-03	3.149E-05	
U-238	U-238	5.400E-05	1.781E-06	1.751E-06	1.692E-06	1.501E-06	1.066E-06	3.216E-07	1.049E-08	6.564E-14	
U-238+D	U-238+D	9.999E-01	6.543E-02	6.432E-02	6.216E-02	5.514E-02	3.916E-02	1.182E-02	3.852E-04	2.411E-09	
U-238+D	U-234	9.999E-01	5.221E-08	1.543E-07	3.480E-07	9.264E-07	1.911E-06	1.900E-06	1.852E-07	3.856E-12	
U-238+D	Th-230	9.999E-01	3.829E-13	2.654E-12	1.372E-11	1.134E-10	7.662E-10	4.043E-09	7.504E-09	7.351E-09	
U-238+D	Ra-226+D	9.999E-01	1.103E-15	1.642E-14	1.884E-13	4.697E-12	9.666E-11	1.967E-09	1.450E-08	4.412E-08	
U-238+D	Pb-210+D	9.999E-01	1.407E-19	4.311E-18	1.058E-16	7.521E-15	4.086E-13	2.038E-11	2.390E-10	8.295E-10	
U-238+D	Po-210	9.999E-01	1.244E-20	6.315E-19	2.316E-17	2.265E-15	1.395E-13	7.297E-12	8.662E-11	3.014E-10	
U-238+D	äDSR(j)		6.543E-02	6.432E-02	6.216E-02	5.514E-02	3.916E-02	1.182E-02	3.855E-04	5.502E-08	

The DSR includes contributions from associated (half-life > 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	6.767E+02	6.884E+02	7.124E+02	8.029E+02	1.130E+03	3.712E+03	6.626E+04	7.674E+04	
U-235	1.266E+02	1.288E+02	1.332E+02	1.501E+02	2.105E+02	6.724E+02	1.203E+04	7.940E+05	
U-238	3.821E+02	3.887E+02	4.022E+02	4.534E+02	6.384E+02	2.115E+03	6.486E+04	*3.361E+05	

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 = 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)
U-234	4.890E-01	0.000E+00	3.694E-02	6.767E+02	3.694E-02	6.767E+02
U-235	2.250E-02	0.000E+00	1.975E-01	1.266E+02	1.975E-01	1.266E+02
U-238	4.890E-01	0.000E+00	6.544E-02	3.821E+02	6.544E-02	3.821E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	1.806E-02	1.776E-02	1.716E-02	1.522E-02	1.081E-02	3.261E-03	1.063E-04	6.638E-10		
U-234	U-238	9.999E-01	2.553E-08	7.544E-08	1.702E-07	4.530E-07	9.345E-07	9.291E-07	9.056E-08	1.885E-12		
U-234	äDOSE(j)		1.806E-02	1.776E-02	1.716E-02	1.522E-02	1.081E-02	3.262E-03	1.064E-04	6.657E-10		
Th-230	U-234	1.000E+00	1.987E-07	5.916E-07	1.357E-06	3.840E-06	9.484E-06	1.907E-05	2.275E-05	2.160E-05		
Th-230	U-238	9.999E-01	1.872E-13	1.298E-12	6.711E-12	5.548E-11	3.747E-10	1.977E-09	3.669E-09	3.595E-09		
Th-230	äDOSE(j)		1.987E-07	5.916E-07	1.357E-06	3.840E-06	9.485E-06	1.907E-05	2.275E-05	2.160E-05		
Ra-226	U-234	1.000E+00	7.631E-10	5.313E-09	2.775E-08	2.379E-07	1.783E-06	1.336E-05	5.422E-05	1.343E-04		
Ra-226	U-238	9.999E-01	5.394E-16	8.030E-15	9.210E-14	2.297E-12	4.727E-11	9.620E-10	7.090E-09	2.158E-08		
Ra-226	äDOSE(j)		7.631E-10	5.313E-09	2.775E-08	2.379E-07	1.783E-06	1.336E-05	5.422E-05	1.343E-04		
Pb-210	U-234	1.000E+00	1.215E-13	1.802E-12	2.051E-11	4.978E-10	9.525E-09	1.597E-07	9.261E-07	2.529E-06		
Pb-210	U-238	9.999E-01	6.881E-20	2.108E-18	5.173E-17	3.678E-15	1.998E-13	9.968E-12	1.169E-10	4.056E-10		
Pb-210	äDOSE(j)		1.215E-13	1.802E-12	2.051E-11	4.978E-10	9.525E-09	1.597E-07	9.262E-07	2.530E-06		
Po-210	U-234	1.000E+00	1.241E-14	3.009E-13	4.957E-12	1.567E-10	3.305E-09	5.743E-08	3.359E-07	9.192E-07		
Po-210	U-238	9.999E-01	6.082E-21	3.088E-19	1.133E-17	1.107E-15	6.820E-14	3.568E-12	4.236E-11	1.474E-10		
Po-210	äDOSE(j)		1.241E-14	3.009E-13	4.957E-12	1.567E-10	3.305E-09	5.744E-08	3.359E-07	9.193E-07		
U-235	U-235	1.000E+00	4.443E-03	4.367E-03	4.220E-03	3.744E-03	2.659E-03	8.022E-04	2.616E-05	1.637E-10		
Pa-231	U-235	1.000E+00	1.103E-07	3.278E-07	7.485E-07	2.081E-06	4.877E-06	7.878E-06	4.099E-06	1.396E-07		
Ac-227	U-235	1.000E+00	5.792E-09	3.979E-08	2.016E-07	1.553E-06	8.668E-06	2.646E-05	1.651E-05	5.687E-07		
U-238	U-238	5.400E-05	8.710E-07	8.562E-07	8.274E-07	7.340E-07	5.212E-07	1.573E-07	5.128E-09	3.210E-14		
U-238	U-238	9.999E-01	3.200E-02	3.145E-02	3.040E-02	2.696E-02	1.915E-02	5.778E-03	1.884E-04	1.179E-09		
U-238	äDOSE(j)		3.200E-02	3.145E-02	3.040E-02	2.696E-02	1.915E-02	5.778E-03	1.884E-04	1.179E-09		
íííííííí	íííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí		

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08	
U-234	U-238	9.999E-01		0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11	
U-234	äS(j):			4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08	
Th-230	U-234	1.000E+00		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04	
Th-230	U-238	9.999E-01		0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08	
Th-230	äS(j):			0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04	
Ra-226	U-234	1.000E+00		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05	
Ra-226	U-238	9.999E-01		0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09	
Ra-226	äS(j):			0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05	
Pb-210	U-234	1.000E+00		0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05	
Pb-210	U-238	9.999E-01		0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09	
Pb-210	äS(j):			0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05	
Po-210	U-234	1.000E+00		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05	
Po-210	U-238	9.999E-01		0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09	
Po-210	äS(j):			0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05	
U-235	U-235	1.000E+00		2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10	
Pa-231	U-235	1.000E+00		0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07	
Ac-227	U-235	1.000E+00		0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07	
U-238	U-238	5.400E-05		2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13	
U-238	U-238	9.999E-01		4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08	
U-238	äS(j):			4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08	
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.61 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
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Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

 #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 : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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)	1.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	Romberg failures occurred	EPS
=====					
R014	Density of saturated zone (g/cm**3)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 1 SM Ra-226

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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	active
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 Harshaw OU2 Model AF 1 SM Ra-226

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.064E+00	3.063E+00	3.052E+00	3.014E+00	2.917E+00	2.633E+00	1.991E+00	7.504E-01
M(t):	1.226E-01	1.225E-01	1.221E-01	1.206E-01	1.167E-01	1.053E-01	7.965E-02	3.001E-02

Maximum TDOSE(t): 3.064E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	2.381E-04	0.0001	5.138E-05	0.0000	0.000E+00	0.0000	1.344E+00	0.4387	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-04	0.0001
Po-210	8.224E-07	0.0000	1.184E-05	0.0000	0.000E+00	0.0000	2.123E-02	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-05	0.0000
Ra-226	3.789E-01	0.1236	2.452E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.4306	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-05	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.791E-01	0.1237	8.774E-05	0.0000	0.000E+00	0.0000	2.685E+00	0.8762	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E+00	0.4388
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.126E-02	0.0069
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.698E+00	0.5543
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.064E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	2.309E-04	0.0001	5.933E-05	0.0000	0.000E+00	0.0000	1.321E+00	0.4313	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-04	0.0001
Po-210	1.289E-07	0.0000	1.856E-06	0.0000	0.000E+00	0.0000	3.328E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	3.635E-06	0.0000
Ra-226	3.783E-01	0.1235	2.625E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.4440	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-05	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.786E-01	0.1236	8.744E-05	0.0000	0.000E+00	0.0000	2.684E+00	0.8763	0.000E+00	0.0000	0.000E+00	0.0000	2.293E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.322E+00	0.4314
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.334E-03	0.0011
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.738E+00	0.5675
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.063E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	2.160E-04	0.0001	5.718E-05	0.0000	0.000E+00	0.0000	1.238E+00	0.4058	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-04	0.0001
Po-210	3.166E-09	0.0000	4.558E-08	0.0000	0.000E+00	0.0000	8.174E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.927E-08	0.0000
Ra-226	3.773E-01	0.1236	2.983E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.4704	0.000E+00	0.0000	0.000E+00	0.0000	5.441E-05	0.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.775E-01	0.1237	8.706E-05	0.0000	0.000E+00	0.0000	2.674E+00	0.8762	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.239E+00	0.4059
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.187E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.813E+00	0.5940
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.052E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.709E-04	0.0001	4.526E-05	0.0000	0.000E+00	0.0000	9.796E-01	0.3250	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-04	0.0000
Po-210	7.347E-15	0.0000	1.058E-13	0.0000	0.000E+00	0.0000	1.897E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.072E-13	0.0000
Ra-226	3.737E-01	0.1240	4.058E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.5509	0.000E+00	0.0000	0.000E+00	0.0000	8.742E-05	0.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.738E-01	0.1240	8.584E-05	0.0000	0.000E+00	0.0000	2.640E+00	0.8759	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-04	0.0001

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.799E-01	0.3251
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.900E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.034E+00	0.6749
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.014E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	8.742E-05	0.0000	2.316E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.1718	0.000E+00	0.0000	0.000E+00	0.0000	7.034E-05	0.0000
Po-210	0.000E+00	0.0000	8.439E-30	0.0000	0.000E+00	0.0000	1.513E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.653E-29	0.0000
Ra-226	3.635E-01	0.1246	5.965E-05	0.0000	0.000E+00	0.0000	2.052E+00	0.7035	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.636E-01	0.1246	8.281E-05	0.0000	0.000E+00	0.0000	2.553E+00	0.8753	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.013E-01	0.1719
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.516E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.416E+00	0.8281
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.917E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Pb-210	8.373E-06	0.0000	2.218E-06	0.0000	0.000E+00	0.0000	4.800E-02	0.0182	0.000E+00	0.0000	0.000E+00	0.0000	6.737E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.298E-01	0.1253	7.229E-05	0.0000	0.000E+00	0.0000	2.255E+00	0.8564	0.000E+00	0.0000	0.000E+00	0.0000	1.880E-04	0.0001
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.298E-01	0.1253	7.451E-05	0.0000	0.000E+00	0.0000	2.303E+00	0.8746	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-04	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.802E-02	0.0182
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.585E+00	0.9818
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	2.633E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.029E-08	0.0000	2.725E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.276E-09	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.495E-01	0.1253	5.633E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.8745	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-04	0.0001
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.495E-01	0.1253	5.633E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.8746	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.019E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.899E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.991E+00	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.364E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.991E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	6.684E-19	0.0000	1.771E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.378E-19	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	9.406E-02	0.1254	2.123E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.8745	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-05	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	9.406E-02	0.1254	2.123E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.8745	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-05	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.585E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.858E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.421E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.504E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.421E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.504E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.297E+00	1.254E+00	1.173E+00	9.277E-01	4.746E-01	4.546E-02	5.585E-05	3.634E-15	
Pb-210+D	Po-210	1.000E+00	4.766E-02	6.725E-02	6.595E-02	5.222E-02	2.672E-02	2.559E-03	3.144E-06	2.242E-16	
Pb-210+D	äDSR(j)		1.345E+00	1.322E+00	1.239E+00	9.799E-01	5.013E-01	4.802E-02	5.899E-05	3.858E-15	
Po-210	Po-210	1.000E+00	2.126E-02	3.334E-03	8.187E-05	1.900E-10	1.516E-26	0.000E+00	0.000E+00	0.000E+00	
Ra-226+D	Ra-226+D	1.000E+00	1.674E+00	1.671E+00	1.667E+00	1.650E+00	1.605E+00	1.456E+00	1.102E+00	4.152E-01	
Ra-226+D	Pb-210+D	1.000E+00	2.412E-02	6.436E-02	1.395E-01	3.645E-01	7.683E-01	1.070E+00	8.426E-01	3.176E-01	
Ra-226+D	Po-210	1.000E+00	7.355E-04	2.677E-03	6.854E-03	1.953E-02	4.229E-02	5.933E-02	4.677E-02	1.763E-02	
Ra-226+D	äDSR(j)		1.698E+00	1.738E+00	1.813E+00	2.034E+00	2.416E+00	2.585E+00	1.991E+00	7.504E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.859E+01	1.892E+01	2.018E+01	2.551E+01	4.987E+01	5.206E+02	4.238E+05	*7.634E+13
Po-210	1.176E+03	7.499E+03	3.053E+05	1.316E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15
Ra-226	1.472E+01	1.438E+01	1.379E+01	1.229E+01	1.035E+01	9.672E+00	1.256E+01	3.332E+01
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	0.000E+00	1.345E+00	1.859E+01	1.345E+00	1.859E+01
Po-210	1.000E+00	0.000E+00	2.126E-02	1.176E+03	2.126E-02	1.176E+03
Ra-226	1.000E+00	73.4 ñ 0.1	2.617E+00	9.552E+00	1.698E+00	1.472E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

Summary : RESRAD Harshaw OU2 Model AF 1 SM Ra-226

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide	Parent	THF(i)	DOSE j,t), mrem/yr									
(j)	(i)		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Pb-210	Pb-210	1.000E+00	1.297E+00	1.254E+00	1.173E+00	9.277E-01	4.746E-01	4.546E-02	5.585E-05	3.634E-15		
Pb-210	Ra-226	1.000E+00	2.412E-02	6.436E-02	1.395E-01	3.645E-01	7.683E-01	1.070E+00	8.426E-01	3.176E-01		
Pb-210	äDOSE(j)		1.321E+00	1.319E+00	1.312E+00	1.292E+00	1.243E+00	1.115E+00	8.427E-01	3.176E-01		
Po-210	Pb-210	1.000E+00	4.766E-02	6.725E-02	6.595E-02	5.222E-02	2.672E-02	2.559E-03	3.144E-06	2.242E-16		
Po-210	Po-210	1.000E+00	2.126E-02	3.334E-03	8.187E-05	1.900E-10	1.516E-26	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	7.355E-04	2.677E-03	6.854E-03	1.953E-02	4.229E-02	5.933E-02	4.677E-02	1.763E-02		
Po-210	äDOSE(j)		6.966E-02	7.326E-02	7.288E-02	7.175E-02	6.900E-02	6.189E-02	4.677E-02	1.763E-02		
Ra-226	Ra-226	1.000E+00	1.674E+00	1.671E+00	1.667E+00	1.650E+00	1.605E+00	1.456E+00	1.102E+00	4.152E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	

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

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide	Parent	THF(i)	S(j,t), pCi/g									
(j)	(i)		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15		
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01		
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01		
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15		
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00		
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01		
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01		
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	

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

RESCALC.EXE execution time = 1.47 seconds

Total water/soil iteration failures = 1.

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Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU2 Model AF 3 SM Ra-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	3.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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 waterintake for milk (L/day)	not used 1.600E+02	--- LWI6
R019	Livestock soil intake (kg/day)	not used 5.000E-01	--- LSI

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	3.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

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t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.531E+00	3.529E+00	3.517E+00	3.475E+00	3.365E+00	3.039E+00	2.299E+00	8.662E-01
M(t):	1.413E-01	1.412E-01	1.407E-01	1.390E-01	1.346E-01	1.216E-01	9.194E-02	3.465E-02

Maximum TDOSE(t): 3.531E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	5.019E-04	0.0001	5.794E-05	0.0000	0.000E+00	0.0000	1.344E+00	0.3807	0.000E+00	0.0000	0.000E+00	0.0000	5.067E-04	0.0001
Po-210	1.817E-06	0.0000	1.335E-05	0.0000	0.000E+00	0.0000	2.123E-02	0.0060	0.000E+00	0.0000	0.000E+00	0.0000	6.957E-05	0.0000
Ra-226	8.451E-01	0.2393	2.765E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.3737	0.000E+00	0.0000	0.000E+00	0.0000	1.138E-04	0.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	8.456E-01	0.2394	9.894E-05	0.0000	0.000E+00	0.0000	2.685E+00	0.7603	0.000E+00	0.0000	0.000E+00	0.0000	6.901E-04	0.0002

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E+00	0.3810
Po-210	0.000E+00	0.0000	0.000E+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-02	0.0060
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.165E+00	0.6130
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.531E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.868E-04	0.0001	6.690E-05	0.0000	0.000E+00	0.0000	1.321E+00	0.3743	0.000E+00	0.0000	0.000E+00	0.0000	5.467E-04	0.0002
Po-210	2.848E-07	0.0000	2.093E-06	0.0000	0.000E+00	0.0000	3.329E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-05	0.0000
Ra-226	8.439E-01	0.2391	2.961E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.3853	0.000E+00	0.0000	0.000E+00	0.0000	1.303E-04	0.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.444E-01	0.2392	9.860E-05	0.0000	0.000E+00	0.0000	2.684E+00	0.7605	0.000E+00	0.0000	0.000E+00	0.0000	6.879E-04	0.0002

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.322E+00	0.3746
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.342E-03	0.0009
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.204E+00	0.6244
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.529E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	4.555E-04	0.0001	6.448E-05	0.0000	0.000E+00	0.0000	1.238E+00	0.3521	0.000E+00	0.0000	0.000E+00	0.0000	5.212E-04	0.0001
Po-210	6.994E-09	0.0000	5.139E-08	0.0000	0.000E+00	0.0000	8.174E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.678E-07	0.0000
Ra-226	8.416E-01	0.2393	3.363E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.4082	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-04	0.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.420E-01	0.2394	9.817E-05	0.0000	0.000E+00	0.0000	2.674E+00	0.7604	0.000E+00	0.0000	0.000E+00	0.0000	6.847E-04	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.240E+00	0.3524
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.207E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.277E+00	0.6475
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.517E+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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.603E-04	0.0001	5.104E-05	0.0000	0.000E+00	0.0000	9.796E-01	0.2819	0.000E+00	0.0000	0.000E+00	0.0000	4.125E-04	0.0001
Po-210	1.623E-14	0.0000	1.193E-13	0.0000	0.000E+00	0.0000	1.897E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.215E-13	0.0000
Ra-226	8.335E-01	0.2399	4.576E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.4779	0.000E+00	0.0000	0.000E+00	0.0000	2.623E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.339E-01	0.2400	9.680E-05	0.0000	0.000E+00	0.0000	2.640E+00	0.7598	0.000E+00	0.0000	0.000E+00	0.0000	6.747E-04	0.0002

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.804E-01	0.2821
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.905E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.7179
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.475E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Ra-226

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.843E-04	0.0001	2.611E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.1489	0.000E+00	0.0000	0.000E+00	0.0000	2.110E-04	0.0001
Po-210	1.295E-30	0.0000	9.516E-30	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.959E-29	0.0000
Ra-226	8.107E-01	0.2409	6.727E-05	0.0000	0.000E+00	0.0000	2.052E+00	0.6098	0.000E+00	0.0000	0.000E+00	0.0000	4.390E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.109E-01	0.2410	9.338E-05	0.0000	0.000E+00	0.0000	2.553E+00	0.7588	0.000E+00	0.0000	0.000E+00	0.0000	6.501E-04	0.0002

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.016E-01	0.1491
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.520E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.863E+00	0.8509
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.365E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.765E-05	0.0000	2.501E-06	0.0000	0.000E+00	0.0000	4.800E-02	0.0158	0.000E+00	0.0000	0.000E+00	0.0000	2.021E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	7.355E-01	0.2420	8.152E-05	0.0000	0.000E+00	0.0000	2.255E+00	0.7419	0.000E+00	0.0000	0.000E+00	0.0000	5.639E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	7.355E-01	0.2420	8.402E-05	0.0000	0.000E+00	0.0000	2.303E+00	0.7577	0.000E+00	0.0000	0.000E+00	0.0000	5.841E-04	0.0002

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.804E-02	0.0158
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.991E+00	0.9842
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.039E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	2.169E-08	0.0000	3.073E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.483E-08	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	5.566E-01	0.2422	6.352E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.7576	0.000E+00	0.0000	0.000E+00	0.0000	4.415E-04	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.566E-01	0.2422	6.352E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.7576	0.000E+00	0.0000	0.000E+00	0.0000	4.415E-04	0.0002

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.206E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.902E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.034E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.298E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.299E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.409E-18	0.0000	1.997E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.613E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.098E-01	0.2422	2.394E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.7576	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-04	0.0002
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.098E-01	0.2422	2.394E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.7576	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-04	0.0002

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.755E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.912E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.662E-01	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.662E-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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.298E+00	1.255E+00	1.173E+00	9.281E-01	4.748E-01	4.548E-02	5.587E-05	3.647E-15
Pb-210+D	Po-210	1.000E+00	4.772E-02	6.735E-02	6.604E-02	5.230E-02	2.676E-02	2.563E-03	3.148E-06	2.643E-16
Pb-210+D	äDSR(j)		1.345E+00	1.322E+00	1.240E+00	9.804E-01	5.016E-01	4.804E-02	5.902E-05	3.912E-15
Po-210	Po-210	1.000E+00	2.131E-02	3.342E-03	8.207E-05	1.905E-10	1.520E-26	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	2.140E+00	2.137E+00	2.131E+00	2.110E+00	2.052E+00	1.861E+00	1.409E+00	5.309E-01
Ra-226+D	Pb-210+D	1.000E+00	2.413E-02	6.439E-02	1.396E-01	3.646E-01	7.686E-01	1.070E+00	8.430E-01	3.177E-01
Ra-226+D	Po-210	1.000E+00	7.362E-04	2.680E-03	6.864E-03	1.956E-02	4.235E-02	5.942E-02	4.684E-02	1.765E-02
Ra-226+D	äDSR(j)		2.165E+00	2.204E+00	2.277E+00	2.494E+00	2.863E+00	2.991E+00	2.298E+00	8.662E-01
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.858E+01	1.891E+01	2.017E+01	2.550E+01	4.984E+01	5.204E+02	4.236E+05	*7.634E+13	
Po-210	1.173E+03	7.481E+03	3.046E+05	1.313E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	1.155E+01	1.134E+01	1.098E+01	1.002E+01	8.731E+00	8.359E+00	1.088E+01	2.886E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	0.000E+00	1.345E+00	1.858E+01	1.345E+00	1.858E+01
Po-210	1.000E+00	0.000E+00	2.131E-02	1.173E+03	2.131E-02	1.173E+03
Ra-226	1.000E+00	68.9 ñ 0.1	3.040E+00	8.223E+00	2.165E+00	1.155E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.298E+00	1.255E+00	1.173E+00	9.281E-01	4.748E-01	4.548E-02	5.587E-05	3.647E-15	
Pb-210	Ra-226	1.000E+00	2.413E-02	6.439E-02	1.396E-01	3.646E-01	7.686E-01	1.070E+00	8.430E-01	3.177E-01	
Pb-210	äDOSE(j)		1.322E+00	1.319E+00	1.313E+00	1.293E+00	1.243E+00	1.115E+00	8.430E-01	3.177E-01	
Po-210	Pb-210	1.000E+00	4.772E-02	6.735E-02	6.604E-02	5.230E-02	2.676E-02	2.563E-03	3.148E-06	2.643E-16	
Po-210	Po-210	1.000E+00	2.131E-02	3.342E-03	8.207E-05	1.905E-10	1.520E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	7.362E-04	2.680E-03	6.864E-03	1.956E-02	4.235E-02	5.942E-02	4.684E-02	1.765E-02	
Po-210	äDOSE(j)		6.977E-02	7.337E-02	7.299E-02	7.186E-02	6.910E-02	6.198E-02	4.684E-02	1.765E-02	
Ra-226	Ra-226	1.000E+00	2.140E+00	2.137E+00	2.131E+00	2.110E+00	2.052E+00	1.861E+00	1.409E+00	5.309E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.40 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

$\frac{1}{n} \sum_{i=1}^n \left(\frac{\partial L(\theta)}{\partial \theta_i} \right)^2$

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Site-Specific Parameter Summary	3
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Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
R011	Area of contaminated zone (m**2)	1.000E+01	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.050E+02	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	BRDL
R011	Time since placement of material (yr)	0.000E+00	TI
R011	Times for calculations (yr)	1.000E+00	T(2)
R011	Times for calculations (yr)	3.000E+00	T(3)
R011	Times for calculations (yr)	1.000E+01	T(4)
R011	Times for calculations (yr)	3.000E+01	T(5)
R011	Times for calculations (yr)	1.000E+02	T(6)
R011	Times for calculations (yr)	3.000E+02	T(7)
R011	Times for calculations (yr)	1.000E+03	T(8)
R011	Times for calculations (yr)	not used	T(9)
R011	Times for calculations (yr)	not used	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	W1(3)
R013	Cover depth (m)	0.000E+00	COVER0
R013	Density of cover material (g/cm**3)	not used	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	VCV
R013	Density of contaminated zone (g/cm**3)	1.330E+00	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	VCZ
R013	Contaminated zone total porosity	5.000E-01	TPCZ
R013	Contaminated zone field capacity	2.000E-01	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	HCCZ
R013	Contaminated zone b parameter	4.900E+00	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	WIND
R013	Humidity in air (g/m**3)	not used	HUMID
R013	Evapotranspiration coefficient	4.950E-01	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	PRECIP
R013	Irrigation (m/yr)	2.000E-01	RI
R013	Irrigation mode	overhead	IDITCH
R013	Runoff coefficient	2.000E-01	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	WAREA
R013	Accuracy for water/soil computations	1.000E-03	EPS
R014	Density of saturated zone (g/cm**3)	1.720E+00	DENSAQ
R014	Saturated zone total porosity	3.500E-01	TPSZ
R014	Saturated zone effective porosity	1.800E-01	EPSZ
R014	Saturated zone field capacity	1.000E-01	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	HGWT
R014	Saturated zone b parameter	4.400E+00	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsat. zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsat. zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsat. zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

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)								
XX								
t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	4.444E+00	4.441E+00	4.426E+00	4.375E+00	4.240E+00	3.833E+00	2.899E+00	1.093E+00
M(t):	1.778E-01	1.776E-01	1.770E-01	1.750E-01	1.696E-01	1.533E-01	1.160E-01	4.371E-02

Maximum TDOSE(t): 4.444E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.017E-03	0.0002	6.604E-05	0.0000	0.000E+00	0.0000	1.344E+00	0.3025	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-03	0.0004
Po-210	3.760E-06	0.0000	1.522E-05	0.0000	0.000E+00	0.0000	2.123E-02	0.0048	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-04	0.0001
Ra-226	1.756E+00	0.3951	3.152E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.2969	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.757E+00	0.3953	1.128E-04	0.0000	0.000E+00	0.0000	2.685E+00	0.6042	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-03	0.0005

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E+00	0.3031
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.148E-02	0.0048
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.076E+00	0.6921
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.444E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	9.868E-04	0.0002	7.626E-05	0.0000	0.000E+00	0.0000	1.321E+00	0.2975	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-03	0.0004
Po-210	5.893E-07	0.0000	2.385E-06	0.0000	0.000E+00	0.0000	3.329E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	3.635E-05	0.0000
Ra-226	1.753E+00	0.3948	3.375E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.3062	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.754E+00	0.3950	1.124E-04	0.0000	0.000E+00	0.0000	2.684E+00	0.6044	0.000E+00	0.0000	0.000E+00	0.0000	2.293E-03	0.0005

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.324E+00	0.2981
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.368E-03	0.0008
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.114E+00	0.7011
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.441E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	9.234E-04	0.0002	7.350E-05	0.0000	0.000E+00	0.0000	1.239E+00	0.2798	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-03	0.0004
Po-210	1.447E-08	0.0000	5.858E-08	0.0000	0.000E+00	0.0000	8.175E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.927E-07	0.0000
Ra-226	1.749E+00	0.3951	3.834E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.3244	0.000E+00	0.0000	0.000E+00	0.0000	5.441E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.750E+00	0.3953	1.119E-04	0.0000	0.000E+00	0.0000	2.674E+00	0.6042	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-03	0.0005

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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	0.2804
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.271E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.185E+00	0.7195
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.426E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM RA-226.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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	7.303E-04	0.0002	5.818E-05	0.0000	0.000E+00	0.0000	9.796E-01	0.2239	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-03	0.0003
Po-210	3.359E-14	0.0000	1.360E-13	0.0000	0.000E+00	0.0000	1.897E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.072E-12	0.0000
Ra-226	1.732E+00	0.3958	5.216E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.3796	0.000E+00	0.0000	0.000E+00	0.0000	8.742E-04	0.0002
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.733E+00	0.3960	1.103E-04	0.0000	0.000E+00	0.0000	2.640E+00	0.6035	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-03	0.0005

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.818E-01	0.2244
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.920E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.393E+00	0.7756
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	4.375E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	3.736E-04	0.0001	2.977E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.1182	0.000E+00	0.0000	0.000E+00	0.0000	7.034E-04	0.0002
Po-210	2.680E-30	0.0000	1.085E-29	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.653E-28	0.0000
Ra-226	1.685E+00	0.3973	7.668E-05	0.0000	0.000E+00	0.0000	2.052E+00	0.4839	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-03	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.685E+00	0.3973	1.064E-04	0.0000	0.000E+00	0.0000	2.553E+00	0.6021	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-03	0.0005

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.023E-01	0.1185
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.531E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.738E+00	0.8815
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.240E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.579E-05	0.0000	2.851E-06	0.0000	0.000E+00	0.0000	4.800E-02	0.0125	0.000E+00	0.0000	0.000E+00	0.0000	6.737E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.528E+00	0.3987	9.292E-05	0.0000	0.000E+00	0.0000	2.255E+00	0.5882	0.000E+00	0.0000	0.000E+00	0.0000	1.880E-03	0.0005
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.528E+00	0.3987	9.577E-05	0.0000	0.000E+00	0.0000	2.303E+00	0.6008	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-03	0.0005

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.811E-02	0.0126
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.785E+00	0.9874
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	3.833E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	4.396E-08	0.0000	3.502E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.276E-08	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.156E+00	0.3989	7.240E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.6006	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-03	0.0005
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.156E+00	0.3989	7.240E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.6006	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-03	0.0005

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.019E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.910E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.899E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.364E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.899E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	2.857E-18	0.0000	2.276E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.378E-18	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	4.359E-01	0.3989	2.729E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.6006	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-04	0.0005
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.359E-01	0.3989	2.729E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.6006	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-04	0.0005

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.585E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.098E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.421E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.421E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.299E+00	1.256E+00	1.175E+00	9.292E-01	4.754E-01	4.553E-02	5.594E-05	3.693E-15
Pb-210+D	Po-210	1.000E+00	4.792E-02	6.768E-02	6.637E-02	5.256E-02	2.689E-02	2.576E-03	3.164E-06	4.048E-16
Pb-210+D	äDSR(j)		1.347E+00	1.324E+00	1.241E+00	9.818E-01	5.023E-01	4.811E-02	5.910E-05	4.098E-15
Po-210	Po-210	1.000E+00	2.148E-02	3.368E-03	8.271E-05	1.920E-10	1.531E-26	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	3.051E+00	3.047E+00	3.038E+00	3.009E+00	2.926E+00	2.654E+00	2.008E+00	7.569E-01
Ra-226+D	Pb-210+D	1.000E+00	2.415E-02	6.446E-02	1.397E-01	3.651E-01	7.695E-01	1.071E+00	8.439E-01	3.181E-01
Ra-226+D	Po-210	1.000E+00	7.385E-04	2.691E-03	6.895E-03	1.965E-02	4.256E-02	5.971E-02	4.707E-02	1.774E-02
Ra-226+D	äDSR(j)		3.076E+00	3.114E+00	3.185E+00	3.393E+00	3.738E+00	3.785E+00	2.899E+00	1.093E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.856E+01	1.888E+01	2.014E+01	2.546E+01	4.977E+01	5.197E+02	4.230E+05	*7.634E+13	
Po-210	1.164E+03	7.423E+03	3.023E+05	1.302E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	8.128E+00	8.029E+00	7.850E+00	7.367E+00	6.688E+00	6.605E+00	8.623E+00	2.288E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	0.000E+00	1.347E+00	1.856E+01	1.347E+00	1.856E+01
Po-210	1.000E+00	0.000E+00	2.148E-02	1.164E+03	2.148E-02	1.164E+03
Ra-226	1.000E+00	61.7 ñ 0.1	3.874E+00	6.454E+00	3.076E+00	8.128E+00
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.299E+00	1.256E+00	1.175E+00	9.292E-01	4.754E-01	4.553E-02	5.594E-05	3.693E-15	
Pb-210	Ra-226	1.000E+00	2.415E-02	6.446E-02	1.397E-01	3.651E-01	7.695E-01	1.071E+00	8.439E-01	3.181E-01	
Pb-210	äDOSE(j)		1.323E+00	1.321E+00	1.315E+00	1.294E+00	1.245E+00	1.117E+00	8.440E-01	3.181E-01	
Po-210	Pb-210	1.000E+00	4.792E-02	6.768E-02	6.637E-02	5.256E-02	2.689E-02	2.576E-03	3.164E-06	4.048E-16	
Po-210	Po-210	1.000E+00	2.148E-02	3.368E-03	8.271E-05	1.920E-10	1.531E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	7.385E-04	2.691E-03	6.895E-03	1.965E-02	4.256E-02	5.971E-02	4.707E-02	1.774E-02	
Po-210	äDOSE(j)		7.013E-02	7.374E-02	7.335E-02	7.221E-02	6.945E-02	6.229E-02	4.707E-02	1.774E-02	
Ra-226	Ra-226	1.000E+00	3.051E+00	3.047E+00	3.038E+00	3.009E+00	2.926E+00	2.654E+00	2.008E+00	7.569E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.46 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF (1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF (1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF (1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF (2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF (2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF (2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF (3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF (3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF (3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC (1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC (1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC (2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC (2,2)
D-5	Ra-226+D ,fish	5.000E+01	5.000E+01	BIOFAC (3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC (3,2)

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T (4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T (6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T (7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1 (1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1 (2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1 (3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM RA-226.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name

R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)

R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

[illegible]

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	30.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.133E+00	5.128E+00	5.112E+00	5.054E+00	4.900E+00	4.432E+00	3.352E+00	1.263E+00
M(t):	2.053E-01	2.051E-01	2.045E-01	2.022E-01	1.960E-01	1.773E-01	1.341E-01	5.054E-02

Maximum TDOSE(t): 5.133E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.375E-03	0.0003	7.436E-05	0.0000	0.000E+00	0.0000	1.344E+00	0.2619	0.000E+00	0.0000	0.000E+00	0.0000	5.067E-03	0.0010
Po-210	5.197E-06	0.0000	1.714E-05	0.0000	0.000E+00	0.0000	2.123E-02	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	6.957E-04	0.0001
Ra-226	2.439E+00	0.4752	3.549E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.2571	0.000E+00	0.0000	0.000E+00	0.0000	1.138E-03	0.0002
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.441E+00	0.4755	1.270E-04	0.0000	0.000E+00	0.0000	2.685E+00	0.5231	0.000E+00	0.0000	0.000E+00	0.0000	6.901E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.351E+00	0.2632
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.195E-02	0.0043
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.760E+00	0.7325
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.133E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.334E-03	0.0003	8.587E-05	0.0000	0.000E+00	0.0000	1.321E+00	0.2576	0.000E+00	0.0000	0.000E+00	0.0000	5.467E-03	0.0011
Po-210	8.147E-07	0.0000	2.686E-06	0.0000	0.000E+00	0.0000	3.329E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-04	0.0000
Ra-226	2.436E+00	0.4750	3.800E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.2652	0.000E+00	0.0000	0.000E+00	0.0000	1.303E-03	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.437E+00	0.4752	1.266E-04	0.0000	0.000E+00	0.0000	2.684E+00	0.5234	0.000E+00	0.0000	0.000E+00	0.0000	6.879E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.328E+00	0.2589
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.441E-03	0.0007
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.797E+00	0.7404
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.128E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.248E-03	0.0002	8.276E-05	0.0000	0.000E+00	0.0000	1.239E+00	0.2423	0.000E+00	0.0000	0.000E+00	0.0000	5.212E-03	0.0010
Po-210	2.001E-08	0.0000	6.596E-08	0.0000	0.000E+00	0.0000	8.175E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.678E-06	0.0000
Ra-226	2.429E+00	0.4752	4.317E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.2809	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-03	0.0003
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.430E+00	0.4755	1.260E-04	0.0000	0.000E+00	0.0000	2.674E+00	0.5232	0.000E+00	0.0000	0.000E+00	0.0000	6.847E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.245E+00	0.2436
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.452E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.866E+00	0.7564
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.112E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	9.873E-04	0.0002	6.551E-05	0.0000	0.000E+00	0.0000	9.796E-01	0.1938	0.000E+00	0.0000	0.000E+00	0.0000	4.125E-03	0.0008
Po-210	4.643E-14	0.0000	1.531E-13	0.0000	0.000E+00	0.0000	1.897E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.215E-12	0.0000
Ra-226	2.406E+00	0.4760	5.873E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.3286	0.000E+00	0.0000	0.000E+00	0.0000	2.623E-03	0.0005
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.407E+00	0.4762	1.242E-04	0.0000	0.000E+00	0.0000	2.640E+00	0.5224	0.000E+00	0.0000	0.000E+00	0.0000	6.747E-03	0.0013

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.848E-01	0.1949
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.962E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.069E+00	0.8051
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.054E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM RA-226.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.051E-04	0.0001	3.352E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.1023	0.000E+00	0.0000	0.000E+00	0.0000	2.110E-03	0.0004
Po-210	3.705E-30	0.0000	1.221E-29	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.959E-28	0.0000
Ra-226	2.340E+00	0.4775	8.634E-05	0.0000	0.000E+00	0.0000	2.052E+00	0.4187	0.000E+00	0.0000	0.000E+00	0.0000	4.390E-03	0.0009
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.341E+00	0.4776	1.199E-04	0.0000	0.000E+00	0.0000	2.553E+00	0.5210	0.000E+00	0.0000	0.000E+00	0.0000	6.501E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.038E-01	0.1028
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.565E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.397E+00	0.8972
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	4.900E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	4.838E-05	0.0000	3.210E-06	0.0000	0.000E+00	0.0000	4.800E-02	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	2.021E-04	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.123E+00	0.4790	1.046E-04	0.0000	0.000E+00	0.0000	2.255E+00	0.5088	0.000E+00	0.0000	0.000E+00	0.0000	5.639E-03	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.123E+00	0.4790	1.078E-04	0.0000	0.000E+00	0.0000	2.303E+00	0.5196	0.000E+00	0.0000	0.000E+00	0.0000	5.841E-03	0.0013

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.016E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.826E-02	0.0109
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.383E+00	0.9891
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.016E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.432E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM RA-226.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.944E-08	0.0000	3.944E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.483E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.607E+00	0.4792	8.152E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.5194	0.000E+00	0.0000	0.000E+00	0.0000	4.415E-03	0.0013
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.607E+00	0.4792	8.153E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.5194	0.000E+00	0.0000	0.000E+00	0.0000	4.415E-03	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.206E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.928E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.034E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.352E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.352E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	3.862E-18	0.0000	2.563E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.613E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	6.055E-01	0.4793	3.073E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.5194	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-03	0.0013
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	6.055E-01	0.4793	3.073E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.5194	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-03	0.0013

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.755E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.627E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E+00	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.302E+00	1.259E+00	1.178E+00	9.315E-01	4.766E-01	4.565E-02	5.608E-05	3.820E-15
Pb-210+D	Po-210	1.000E+00	4.846E-02	6.859E-02	6.729E-02	5.329E-02	2.726E-02	2.611E-03	3.208E-06	8.062E-16
Pb-210+D	äDSR(j)		1.351E+00	1.328E+00	1.245E+00	9.848E-01	5.038E-01	4.826E-02	5.928E-05	4.627E-15
Po-210	Po-210	1.000E+00	2.195E-02	3.441E-03	8.452E-05	1.962E-10	1.565E-26	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	3.735E+00	3.730E+00	3.719E+00	3.683E+00	3.582E+00	3.249E+00	2.459E+00	9.267E-01
Ra-226+D	Pb-210+D	1.000E+00	2.420E-02	6.461E-02	1.400E-01	3.660E-01	7.714E-01	1.074E+00	8.460E-01	3.188E-01
Ra-226+D	Po-210	1.000E+00	7.450E-04	2.722E-03	6.984E-03	1.992E-02	4.314E-02	6.053E-02	4.772E-02	1.798E-02
Ra-226+D	äDSR(j)		3.760E+00	3.797E+00	3.866E+00	4.069E+00	4.397E+00	4.383E+00	3.352E+00	1.263E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.851E+01	1.883E+01	2.008E+01	2.539E+01	4.962E+01	5.181E+02	4.217E+05	*7.634E+13	
Po-210	1.139E+03	7.264E+03	2.958E+05	1.275E+11	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	6.649E+00	6.584E+00	6.466E+00	6.144E+00	5.686E+00	5.703E+00	7.457E+00	1.979E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	0.000E+00	1.351E+00	1.851E+01	1.351E+00	1.851E+01
Po-210	1.000E+00	0.000E+00	2.195E-02	1.139E+03	2.195E-02	1.139E+03
Ra-226	1.000E+00	57.3 ñ 0.1	4.506E+00	5.548E+00	3.760E+00	6.649E+00
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.302E+00	1.259E+00	1.178E+00	9.315E-01	4.766E-01	4.565E-02	5.608E-05	3.820E-15	
Pb-210	Ra-226	1.000E+00	2.420E-02	6.461E-02	1.400E-01	3.660E-01	7.714E-01	1.074E+00	8.460E-01	3.188E-01	
Pb-210	äDOSE(j)		1.327E+00	1.324E+00	1.318E+00	1.297E+00	1.248E+00	1.120E+00	8.461E-01	3.188E-01	
Po-210	Pb-210	1.000E+00	4.846E-02	6.859E-02	6.729E-02	5.329E-02	2.726E-02	2.611E-03	3.208E-06	8.062E-16	
Po-210	Po-210	1.000E+00	2.195E-02	3.441E-03	8.452E-05	1.962E-10	1.565E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	7.450E-04	2.722E-03	6.984E-03	1.992E-02	4.314E-02	6.053E-02	4.772E-02	1.798E-02	
Po-210	äDOSE(j)		7.116E-02	7.475E-02	7.436E-02	7.320E-02	7.040E-02	6.315E-02	4.772E-02	1.798E-02	
Ra-226	Ra-226	1.000E+00	3.735E+00	3.730E+00	3.719E+00	3.683E+00	3.582E+00	3.249E+00	2.459E+00	9.267E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.42 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

$\frac{1}{n} \sum_{i=1}^n \left(\frac{\partial L(\theta)}{\partial \theta_i} \right)^2$

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	1.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)

R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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	---	EVSNI
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNI
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

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

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

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	100.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.724E+00	5.720E+00	5.701E+00	5.637E+00	5.468E+00	4.946E+00	3.742E+00	1.410E+00
M(t):	2.290E-01	2.288E-01	2.280E-01	2.255E-01	2.187E-01	1.978E-01	1.497E-01	5.641E-02

Maximum TDOSE(t): 5.724E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
Pb-210	1.669E-03	0.0003	8.461E-05	0.0000	0.000E+00	0.0000	1.344E+00	0.2348	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-02	0.0030
Po-210	6.404E-06	0.0000	1.950E-05	0.0000	0.000E+00	0.0000	2.123E-02	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-03	0.0004
Ra-226	3.015E+00	0.5266	4.039E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.2305	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-03	0.0007
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.016E+00	0.5269	1.445E-04	0.0000	0.000E+00	0.0000	2.685E+00	0.4690	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-02	0.0040

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.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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+00	0.2381
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.358E-02	0.0041
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.338E+00	0.7578
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.724E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.620E-03	0.0003	9.771E-05	0.0000	0.000E+00	0.0000	1.321E+00	0.2310	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-02	0.0032
Po-210	1.004E-06	0.0000	3.056E-06	0.0000	0.000E+00	0.0000	3.329E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	3.635E-04	0.0001
Ra-226	3.010E+00	0.5263	4.324E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.2378	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-03	0.0008
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.012E+00	0.5266	1.440E-04	0.0000	0.000E+00	0.0000	2.684E+00	0.4693	0.000E+00	0.0000	0.000E+00	0.0000	2.293E-02	0.0040

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.341E+00	0.2345
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.697E-03	0.0006
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.375E+00	0.7649
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.720E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.515E-03	0.0003	9.417E-05	0.0000	0.000E+00	0.0000	1.239E+00	0.2173	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-02	0.0030
Po-210	2.465E-08	0.0000	7.505E-08	0.0000	0.000E+00	0.0000	8.176E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.927E-06	0.0000
Ra-226	3.002E+00	0.5266	4.912E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.2518	0.000E+00	0.0000	0.000E+00	0.0000	5.441E-03	0.0010
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.004E+00	0.5269	1.434E-04	0.0000	0.000E+00	0.0000	2.674E+00	0.4691	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-02	0.0040

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.258E+00	0.2206
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.078E-05	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.443E+00	0.7794
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.701E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.199E-03	0.0002	7.454E-05	0.0000	0.000E+00	0.0000	9.796E-01	0.1738	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-02	0.0024
Po-210	5.722E-14	0.0000	1.742E-13	0.0000	0.000E+00	0.0000	1.898E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.072E-11	0.0000
Ra-226	2.973E+00	0.5274	6.683E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.2946	0.000E+00	0.0000	0.000E+00	0.0000	8.742E-03	0.0016
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.975E+00	0.5276	1.414E-04	0.0000	0.000E+00	0.0000	2.640E+00	0.4684	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-02	0.0040

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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	0.1764
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.107E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.643E+00	0.8236
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	5.637E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	6.132E-04	0.0001	3.814E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.0917	0.000E+00	0.0000	0.000E+00	0.0000	7.034E-03	0.0013
Po-210	4.565E-30	0.0000	1.390E-29	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.653E-27	0.0000
Ra-226	2.892E+00	0.5289	9.824E-05	0.0000	0.000E+00	0.0000	2.052E+00	0.3753	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-02	0.0027
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.893E+00	0.5291	1.364E-04	0.0000	0.000E+00	0.0000	2.553E+00	0.4670	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-02	0.0040

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.089E-01	0.0931
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.681E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.959E+00	0.9069
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.468E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.873E-05	0.0000	3.653E-06	0.0000	0.000E+00	0.0000	4.800E-02	0.0097	0.000E+00	0.0000	0.000E+00	0.0000	6.737E-04	0.0001
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.624E+00	0.5305	1.191E-04	0.0000	0.000E+00	0.0000	2.255E+00	0.4559	0.000E+00	0.0000	0.000E+00	0.0000	1.880E-02	0.0038
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.624E+00	0.5305	1.227E-04	0.0000	0.000E+00	0.0000	2.303E+00	0.4656	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-02	0.0039

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.721E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.874E-02	0.0099
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.107E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.897E+00	0.9901
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.828E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.946E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	7.216E-08	0.0000	4.487E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.276E-07	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	1.986E+00	0.5306	9.276E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.4654	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.0039
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.986E+00	0.5306	9.277E-05	0.0000	0.000E+00	0.0000	1.741E+00	0.4654	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.0039

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.019E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.988E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.345E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.742E+00	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.364E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.742E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	4.689E-18	0.0000	2.916E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.378E-17	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	7.484E-01	0.5307	3.497E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.4653	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-03	0.0039
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	7.484E-01	0.5307	3.497E-05	0.0000	0.000E+00	0.0000	6.562E-01	0.4653	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-03	0.0039

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.585E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.475E-15	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.421E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.421E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E+00	1.0000

Sum of all water independent and dependent pathways.

The DSR includes contributions from associated (half-life ≥ 30 days) daughters.

[illegible]

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i, tmin)	G(i, tmin)	DSR(i, tmax)	G(i, tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
Pb-210	1.000E+00	0.000E+00	1.363E+00	1.834E+01	1.363E+00	1.834E+01
Po-210	1.000E+00	0.000E+00	2.358E-02	1.060E+03	2.358E-02	1.060E+03
Ra-226	1.000E+00	54.1 ñ 0.1	5.052E+00	4.949E+00	4.338E+00	5.763E+00
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.313E+00	1.269E+00	1.187E+00	9.388E-01	4.803E-01	4.600E-02	5.652E-05	4.264E-15	
Pb-210	Ra-226	1.000E+00	2.436E-02	6.508E-02	1.411E-01	3.688E-01	7.774E-01	1.082E+00	8.527E-01	3.213E-01	
Pb-210	äDOSE(j)		1.337E+00	1.334E+00	1.328E+00	1.308E+00	1.258E+00	1.128E+00	8.527E-01	3.213E-01	
Po-210	Pb-210	1.000E+00	5.037E-02	7.175E-02	7.048E-02	5.582E-02	2.856E-02	2.735E-03	3.360E-06	2.211E-15	
Po-210	Po-210	1.000E+00	2.358E-02	3.697E-03	9.078E-05	2.107E-10	1.681E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	7.674E-04	2.830E-03	7.292E-03	2.084E-02	4.517E-02	6.339E-02	4.997E-02	1.883E-02	
Po-210	äDOSE(j)		7.471E-02	7.828E-02	7.787E-02	7.666E-02	7.372E-02	6.612E-02	4.997E-02	1.883E-02	
Ra-226	Ra-226	1.000E+00	4.313E+00	4.307E+00	4.295E+00	4.253E+00	4.136E+00	3.752E+00	2.839E+00	1.070E+00	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.41 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter		
Menu	Input	Default (If different from user input)	Name		
XX					
R011	Area of contaminated zone (m**2)	3.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCHZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCHZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)

R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	300.00 square meters	Pb-210	1.000E+00
Thickness:	1.50 meters	Po-210	1.000E+00
Cover Depth:	0.00 meters	Ra-226	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.023E+00	6.017E+00	5.998E+00	5.931E+00	5.753E+00	5.205E+00	3.937E+00	1.484E+00
M(t):	2.409E-01	2.407E-01	2.399E-01	2.372E-01	2.301E-01	2.082E-01	1.575E-01	5.936E-02

Maximum TDOSE(t): 6.023E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.790E-03	0.0003	9.510E-05	0.0000	0.000E+00	0.0000	1.344E+00	0.2232	0.000E+00	0.0000	0.000E+00	0.0000	5.067E-02	0.0084
Po-210	6.926E-06	0.0000	2.192E-05	0.0000	0.000E+00	0.0000	2.123E-02	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	6.957E-03	0.0012
Ra-226	3.267E+00	0.5424	4.539E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.2191	0.000E+00	0.0000	0.000E+00	0.0000	1.138E-02	0.0019
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.268E+00	0.5427	1.624E-04	0.0000	0.000E+00	0.0000	2.685E+00	0.4458	0.000E+00	0.0000	0.000E+00	0.0000	6.901E-02	0.0115

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+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	0.2319
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.822E-02	0.0047
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.598E+00	0.7634
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.023E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.736E-03	0.0003	1.098E-04	0.0000	0.000E+00	0.0000	1.321E+00	0.2196	0.000E+00	0.0000	0.000E+00	0.0000	5.467E-02	0.0091
Po-210	1.086E-06	0.0000	3.435E-06	0.0000	0.000E+00	0.0000	3.329E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-03	0.0002
Ra-226	3.262E+00	0.5421	4.860E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.2260	0.000E+00	0.0000	0.000E+00	0.0000	1.303E-02	0.0022
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.264E+00	0.5424	1.619E-04	0.0000	0.000E+00	0.0000	2.684E+00	0.4461	0.000E+00	0.0000	0.000E+00	0.0000	6.879E-02	0.0114

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.378E+00	0.2289
Po-210	0.000E+00	0.0000	0.000E+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-03	0.0007
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.635E+00	0.7703
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.017E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.625E-03	0.0003	1.058E-04	0.0000	0.000E+00	0.0000	1.239E+00	0.2065	0.000E+00	0.0000	0.000E+00	0.0000	5.212E-02	0.0087
Po-210	2.666E-08	0.0000	8.436E-08	0.0000	0.000E+00	0.0000	8.176E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.678E-05	0.0000
Ra-226	3.253E+00	0.5424	5.521E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.2394	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-02	0.0027
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.255E+00	0.5427	1.611E-04	0.0000	0.000E+00	0.0000	2.674E+00	0.4459	0.000E+00	0.0000	0.000E+00	0.0000	6.847E-02	0.0114

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.292E+00	0.2155
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.087E-04	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.705E+00	0.7845
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.998E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.285E-03	0.0002	8.378E-05	0.0000	0.000E+00	0.0000	9.796E-01	0.1652	0.000E+00	0.0000	0.000E+00	0.0000	4.125E-02	0.0070
Po-210	6.188E-14	0.0000	1.958E-13	0.0000	0.000E+00	0.0000	1.898E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.215E-11	0.0000
Ra-226	3.222E+00	0.5432	7.511E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.2800	0.000E+00	0.0000	0.000E+00	0.0000	2.623E-02	0.0044
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.223E+00	0.5434	1.589E-04	0.0000	0.000E+00	0.0000	2.640E+00	0.4452	0.000E+00	0.0000	0.000E+00	0.0000	6.747E-02	0.0114

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.022E+00	0.1724
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.522E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.909E+00	0.8276
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.931E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.575E-04	0.0001	4.286E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.0871	0.000E+00	0.0000	0.000E+00	0.0000	2.110E-02	0.0037
Po-210	4.936E-30	0.0000	1.562E-29	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.959E-27	0.0000
Ra-226	3.134E+00	0.5447	1.104E-04	0.0000	0.000E+00	0.0000	2.052E+00	0.3567	0.000E+00	0.0000	0.000E+00	0.0000	4.390E-02	0.0076
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.135E+00	0.5449	1.533E-04	0.0000	0.000E+00	0.0000	2.553E+00	0.4438	0.000E+00	0.0000	0.000E+00	0.0000	6.501E-02	0.0113

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.230E-01	0.0909
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.012E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.230E+00	0.9091
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	5.753E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.298E-05	0.0000	4.106E-06	0.0000	0.000E+00	0.0000	4.800E-02	0.0092	0.000E+00	0.0000	0.000E+00	0.0000	2.021E-03	0.0004
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.843E+00	0.5463	1.338E-04	0.0000	0.000E+00	0.0000	2.255E+00	0.4332	0.000E+00	0.0000	0.000E+00	0.0000	5.639E-02	0.0108
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.843E+00	0.5463	1.379E-04	0.0000	0.000E+00	0.0000	2.303E+00	0.4425	0.000E+00	0.0000	0.000E+00	0.0000	5.841E-02	0.0112

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.016E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.009E-02	0.0096
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.322E-30	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.154E+00	0.9904
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.648E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.205E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	7.737E-08	0.0000	5.044E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.483E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.152E+00	0.5465	1.043E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4423	0.000E+00	0.0000	0.000E+00	0.0000	4.415E-02	0.0112
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.152E+00	0.5465	1.043E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4423	0.000E+00	0.0000	0.000E+00	0.0000	4.415E-02	0.0112

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.206E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.154E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.034E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.937E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.609E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.937E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.027E-18	0.0000	3.278E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.613E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.110E-01	0.5465	3.930E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4422	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-02	0.0112
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.110E-01	0.5465	3.930E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4422	0.000E+00	0.0000	0.000E+00	0.0000	1.664E-02	0.0112

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.755E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.175E-14	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.484E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.262E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.484E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.341E+00	1.297E+00	1.213E+00	9.592E-01	4.907E-01	4.700E-02	5.774E-05	5.527E-15
Pb-210+D	Po-210	1.000E+00	5.579E-02	8.078E-02	7.959E-02	6.303E-02	3.225E-02	3.089E-03	3.795E-06	6.225E-15
Pb-210+D	äDSR(j)		1.397E+00	1.378E+00	1.292E+00	1.022E+00	5.230E-01	5.009E-02	6.154E-05	1.175E-14
Po-210	Po-210	1.000E+00	2.822E-02	4.424E-03	1.087E-04	2.522E-10	2.012E-26	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	4.572E+00	4.566E+00	4.553E+00	4.509E+00	4.385E+00	3.977E+00	3.010E+00	1.134E+00
Ra-226+D	Pb-210+D	1.000E+00	2.480E-02	6.639E-02	1.441E-01	3.767E-01	7.942E-01	1.106E+00	8.711E-01	3.283E-01
Ra-226+D	Po-210	1.000E+00	8.313E-04	3.136E-03	8.171E-03	2.347E-02	5.094E-02	7.153E-02	5.639E-02	2.126E-02
Ra-226+D	äDSR(j)		4.598E+00	4.635E+00	4.705E+00	4.909E+00	5.230E+00	5.154E+00	3.937E+00	1.484E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.790E+01	1.815E+01	1.934E+01	2.446E+01	4.780E+01	4.991E+02	4.063E+05	*7.634E+13	
Po-210	8.859E+02	5.650E+03	2.301E+05	9.914E+10	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	5.438E+00	5.394E+00	5.313E+00	5.093E+00	4.780E+00	4.850E+00	6.350E+00	1.685E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	0.000E+00	1.397E+00	1.790E+01	1.397E+00	1.790E+01
Po-210	1.000E+00	0.000E+00	2.822E-02	8.859E+02	2.822E-02	8.859E+02
Ra-226	1.000E+00	53.4 ñ 0.1	5.321E+00	4.698E+00	4.598E+00	5.438E+00
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.341E+00	1.297E+00	1.213E+00	9.592E-01	4.907E-01	4.700E-02	5.774E-05	5.527E-15	
Pb-210	Ra-226	1.000E+00	2.480E-02	6.639E-02	1.441E-01	3.767E-01	7.942E-01	1.106E+00	8.711E-01	3.283E-01	
Pb-210	äDOSE(j)		1.366E+00	1.363E+00	1.357E+00	1.336E+00	1.285E+00	1.153E+00	8.712E-01	3.283E-01	
Po-210	Pb-210	1.000E+00	5.579E-02	8.078E-02	7.959E-02	6.303E-02	3.225E-02	3.089E-03	3.795E-06	6.225E-15	
Po-210	Po-210	1.000E+00	2.822E-02	4.424E-03	1.087E-04	2.522E-10	2.012E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	8.313E-04	3.136E-03	8.171E-03	2.347E-02	5.094E-02	7.153E-02	5.639E-02	2.126E-02	
Po-210	äDOSE(j)		8.484E-02	8.834E-02	8.787E-02	8.650E-02	8.319E-02	7.462E-02	5.639E-02	2.126E-02	
Ra-226	Ra-226	1.000E+00	4.572E+00	4.566E+00	4.553E+00	4.509E+00	4.385E+00	3.977E+00	3.010E+00	1.134E+00	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.47 seconds

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1000 SM RA-226.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	1.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1000.00 square meters	Pb-210 1.000E+00
Thickness: 1.50 meters	Po-210 1.000E+00
Cover Depth: 0.00 meters	Ra-226 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.343E+00	6.336E+00	6.316E+00	6.245E+00	6.057E+00	5.479E+00	4.145E+00	1.562E+00
M(t):	2.537E-01	2.535E-01	2.526E-01	2.498E-01	2.423E-01	2.192E-01	1.658E-01	6.249E-02

Maximum TDOSE(t): 6.343E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.863E-03	0.0003	1.080E-04	0.0000	0.000E+00	0.0000	1.344E+00	0.2119	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-01	0.0266
Po-210	7.267E-06	0.0000	2.488E-05	0.0000	0.000E+00	0.0000	2.124E-02	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-02	0.0037
Ra-226	3.425E+00	0.5401	5.154E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.2080	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-02	0.0060
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.427E+00	0.5404	1.844E-04	0.0000	0.000E+00	0.0000	2.685E+00	0.4233	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-01	0.0363

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.515E+00	0.2389
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.446E-02	0.0070
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.783E+00	0.7541
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.343E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.808E-03	0.0003	1.247E-04	0.0000	0.000E+00	0.0000	1.321E+00	0.2085	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-01	0.0288
Po-210	1.139E-06	0.0000	3.900E-06	0.0000	0.000E+00	0.0000	3.330E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	3.635E-03	0.0006
Ra-226	3.421E+00	0.5398	5.517E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.2146	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-02	0.0069
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.422E+00	0.5401	1.838E-04	0.0000	0.000E+00	0.0000	2.684E+00	0.4237	0.000E+00	0.0000	0.000E+00	0.0000	2.293E-01	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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.505E+00	0.2376
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.970E-03	0.0011
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.824E+00	0.7613
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.336E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.691E-03	0.0003	1.202E-04	0.0000	0.000E+00	0.0000	1.239E+00	0.1961	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-01	0.0275
Po-210	2.797E-08	0.0000	9.578E-08	0.0000	0.000E+00	0.0000	8.177E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.927E-05	0.0000
Ra-226	3.411E+00	0.5401	6.268E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.2273	0.000E+00	0.0000	0.000E+00	0.0000	5.441E-02	0.0086
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.413E+00	0.5404	1.829E-04	0.0000	0.000E+00	0.0000	2.674E+00	0.4234	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-01	0.0361

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.414E+00	0.2239
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.712E-04	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.901E+00	0.7761
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.316E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1000 SM RA-226.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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.338E-03	0.0002	9.512E-05	0.0000	0.000E+00	0.0000	9.797E-01	0.1569	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-01	0.0220
Po-210	6.492E-14	0.0000	2.223E-13	0.0000	0.000E+00	0.0000	1.898E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.072E-10	0.0000
Ra-226	3.378E+00	0.5410	8.528E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.2659	0.000E+00	0.0000	0.000E+00	0.0000	8.742E-02	0.0140
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.380E+00	0.5412	1.804E-04	0.0000	0.000E+00	0.0000	2.640E+00	0.4228	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-01	0.0360

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.119E+00	0.1791
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.973E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.127E+00	0.8209
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	6.245E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1000 SM RA-226.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.844E-04	0.0001	4.867E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.0827	0.000E+00	0.0000	0.000E+00	0.0000	7.034E-02	0.0116
Po-210	5.180E-30	0.0000	1.773E-29	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.653E-26	0.0000
Ra-226	3.286E+00	0.5425	1.254E-04	0.0000	0.000E+00	0.0000	2.052E+00	0.3388	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-01	0.0242
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.287E+00	0.5427	1.740E-04	0.0000	0.000E+00	0.0000	2.553E+00	0.4215	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-01	0.0358

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.723E-01	0.0945
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.169E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.485E+00	0.9055
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	6.057E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1000 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.556E-05	0.0000	4.661E-06	0.0000	0.000E+00	0.0000	4.801E-02	0.0088	0.000E+00	0.0000	0.000E+00	0.0000	6.737E-03	0.0012
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.981E+00	0.5441	1.519E-04	0.0000	0.000E+00	0.0000	2.255E+00	0.4115	0.000E+00	0.0000	0.000E+00	0.0000	1.880E-01	0.0343
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.981E+00	0.5441	1.566E-04	0.0000	0.000E+00	0.0000	2.303E+00	0.4203	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-01	0.0355

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.235E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.481E-02	0.0100
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.642E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.424E+00	0.9900
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.877E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.479E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1000 SM RA-226.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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	8.053E-08	0.0000	5.726E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.276E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.256E+00	0.5443	1.184E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4201	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-01	0.0355
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.256E+00	0.5443	1.184E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4202	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-01	0.0355

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.130E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.734E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.047E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.145E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.178E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.145E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1000 SM RA-226.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.233E-18	0.0000	3.721E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.378E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.504E-01	0.5443	4.462E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4201	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-02	0.0355
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.504E-01	0.5443	4.462E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4201	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-02	0.0355

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.013E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.451E-14	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.562E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.562E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.440E+00	1.393E+00	1.303E+00	1.030E+00	5.271E-01	5.049E-02	6.202E-05	8.641E-15
Pb-210+D	Po-210	1.000E+00	7.474E-02	1.123E-01	1.114E-01	8.827E-02	4.516E-02	4.326E-03	5.314E-06	1.587E-14
Pb-210+D	äDSR(j)		1.515E+00	1.505E+00	1.414E+00	1.119E+00	5.723E-01	5.481E-02	6.734E-05	2.451E-14
Po-210	Po-210	1.000E+00	4.446E-02	6.970E-03	1.712E-04	3.973E-10	3.169E-26	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	4.755E+00	4.749E+00	4.736E+00	4.690E+00	4.561E+00	4.137E+00	3.130E+00	1.180E+00
Ra-226+D	Pb-210+D	1.000E+00	2.636E-02	7.098E-02	1.544E-01	4.043E-01	8.528E-01	1.187E+00	9.354E-01	3.526E-01
Ra-226+D	Po-210	1.000E+00	1.055E-03	4.206E-03	1.125E-02	3.267E-02	7.115E-02	9.999E-02	7.883E-02	2.973E-02
Ra-226+D	äDSR(j)		4.783E+00	4.824E+00	4.901E+00	5.127E+00	5.485E+00	5.424E+00	4.145E+00	1.562E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.650E+01	1.661E+01	1.768E+01	2.235E+01	4.369E+01	4.561E+02	3.713E+05	*7.634E+13	
Po-210	5.623E+02	3.587E+03	1.461E+05	6.293E+10	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	5.227E+00	5.182E+00	5.101E+00	4.876E+00	4.558E+00	4.609E+00	6.032E+00	1.600E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	0.000E+00	1.515E+00	1.650E+01	1.515E+00	1.650E+01
Po-210	1.000E+00	0.000E+00	4.446E-02	5.623E+02	4.446E-02	5.623E+02
Ra-226	1.000E+00	54.6 ñ 0.1	5.592E+00	4.471E+00	4.783E+00	5.227E+00
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.440E+00	1.393E+00	1.303E+00	1.030E+00	5.271E-01	5.049E-02	6.202E-05	8.641E-15	
Pb-210	Ra-226	1.000E+00	2.636E-02	7.098E-02	1.544E-01	4.043E-01	8.528E-01	1.187E+00	9.354E-01	3.526E-01	
Pb-210	äDOSE(j)		1.467E+00	1.464E+00	1.457E+00	1.435E+00	1.380E+00	1.238E+00	9.355E-01	3.526E-01	
Po-210	Pb-210	1.000E+00	7.474E-02	1.123E-01	1.114E-01	8.827E-02	4.516E-02	4.326E-03	5.314E-06	1.587E-14	
Po-210	Po-210	1.000E+00	4.446E-02	6.970E-03	1.712E-04	3.973E-10	3.169E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	1.055E-03	4.206E-03	1.125E-02	3.267E-02	7.115E-02	9.999E-02	7.883E-02	2.973E-02	
Po-210	äDOSE(j)		1.203E-01	1.235E-01	1.229E-01	1.209E-01	1.163E-01	1.043E-01	7.884E-02	2.973E-02	
Ra-226	Ra-226	1.000E+00	4.755E+00	4.749E+00	4.736E+00	4.690E+00	4.561E+00	4.137E+00	3.130E+00	1.180E+00	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.39 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
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Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
<div style="border: 1px solid black; height: 15px; width: 100%;"></div>					
R011	Area of contaminated zone (m**2)	3.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Pb-210	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)

R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)

R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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 Harshaw OU2 Model AF 3000 SM Ra-226

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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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

[illegible]

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3000.00 square meters	Pb-210 1.000E+00
Thickness: 1.50 meters	Po-210 1.000E+00
Cover Depth: 0.00 meters	Ra-226 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.413E+00	6.407E+00	6.386E+00	6.315E+00	6.125E+00	5.541E+00	4.191E+00	1.580E+00
M(t):	2.565E-01	2.563E-01	2.554E-01	2.526E-01	2.450E-01	2.216E-01	1.677E-01	6.319E-02

Maximum TDOSE(t): 6.413E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.905E-03	0.0003	1.211E-04	0.0000	0.000E+00	0.0000	1.344E+00	0.2096	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-01	0.0263
Po-210	7.426E-06	0.0000	2.790E-05	0.0000	0.000E+00	0.0000	2.124E-02	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-02	0.0036
Ra-226	3.496E+00	0.5451	5.780E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.2057	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-02	0.0059
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.498E+00	0.5454	2.068E-04	0.0000	0.000E+00	0.0000	2.685E+00	0.4187	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-01	0.0359

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.515E+00	0.2363
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.446E-02	0.0069
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.854E+00	0.7568
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.413E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.848E-03	0.0003	1.398E-04	0.0000	0.000E+00	0.0000	1.321E+00	0.2062	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-01	0.0284
Po-210	1.164E-06	0.0000	4.374E-06	0.0000	0.000E+00	0.0000	3.330E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	3.635E-03	0.0006
Ra-226	3.491E+00	0.5449	6.187E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.2123	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-02	0.0068
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.493E+00	0.5452	2.061E-04	0.0000	0.000E+00	0.0000	2.684E+00	0.4190	0.000E+00	0.0000	0.000E+00	0.0000	2.293E-01	0.0358

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.505E+00	0.2350
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.971E-03	0.0011
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.895E+00	0.7640
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.407E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	1.730E-03	0.0003	1.348E-04	0.0000	0.000E+00	0.0000	1.239E+00	0.1939	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-01	0.0272
Po-210	2.859E-08	0.0000	1.074E-07	0.0000	0.000E+00	0.0000	8.178E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.927E-05	0.0000
Ra-226	3.482E+00	0.5452	7.029E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.2248	0.000E+00	0.0000	0.000E+00	0.0000	5.441E-02	0.0085
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.483E+00	0.5455	2.052E-04	0.0000	0.000E+00	0.0000	2.674E+00	0.4188	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-01	0.0357

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.414E+00	0.2214
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.712E-04	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.972E+00	0.7785
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.386E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.368E-03	0.0002	1.067E-04	0.0000	0.000E+00	0.0000	9.797E-01	0.1551	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-01	0.0218
Po-210	6.635E-14	0.0000	2.493E-13	0.0000	0.000E+00	0.0000	1.898E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.072E-10	0.0000
Ra-226	3.448E+00	0.5460	9.563E-05	0.0000	0.000E+00	0.0000	1.661E+00	0.2630	0.000E+00	0.0000	0.000E+00	0.0000	8.742E-02	0.0138
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.450E+00	0.5463	2.023E-04	0.0000	0.000E+00	0.0000	2.640E+00	0.4181	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-01	0.0356

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.119E+00	0.1771
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.973E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.197E+00	0.8229
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.315E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.999E-04	0.0001	5.458E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.0818	0.000E+00	0.0000	0.000E+00	0.0000	7.034E-02	0.0115
Po-210	5.293E-30	0.0000	1.989E-29	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.653E-26	0.0000
Ra-226	3.354E+00	0.5476	1.406E-04	0.0000	0.000E+00	0.0000	2.052E+00	0.3350	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-01	0.0239
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.355E+00	0.5477	1.952E-04	0.0000	0.000E+00	0.0000	2.553E+00	0.4169	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-01	0.0354

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.723E-01	0.0934
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.170E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.553E+00	0.9066
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.125E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3000 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.704E-05	0.0000	5.227E-06	0.0000	0.000E+00	0.0000	4.801E-02	0.0087	0.000E+00	0.0000	0.000E+00	0.0000	6.737E-03	0.0012
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.043E+00	0.5492	1.704E-04	0.0000	0.000E+00	0.0000	2.255E+00	0.4070	0.000E+00	0.0000	0.000E+00	0.0000	1.880E-01	0.0339
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	3.043E+00	0.5492	1.756E-04	0.0000	0.000E+00	0.0000	2.303E+00	0.4156	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-01	0.0351

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.235E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.482E-02	0.0099
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.642E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.486E+00	0.9901
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.877E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.541E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	8.235E-08	0.0000	6.422E-09	0.0000	0.000E+00	0.0000	5.897E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.276E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.303E+00	0.5494	1.327E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4155	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-01	0.0351
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	2.303E+00	0.5494	1.328E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4155	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-01	0.0351

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.130E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.734E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.047E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.191E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.178E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.191E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Ra-226

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	5.352E-18	0.0000	4.173E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.378E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.679E-01	0.5494	5.004E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4154	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-02	0.0351
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	8.679E-01	0.5494	5.004E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4154	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-02	0.0351

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.013E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.451E-14	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.580E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.580E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.440E+00	1.393E+00	1.303E+00	1.030E+00	5.271E-01	5.049E-02	6.203E-05	8.641E-15
Pb-210+D	Po-210	1.000E+00	7.475E-02	1.123E-01	1.114E-01	8.828E-02	4.516E-02	4.326E-03	5.314E-06	1.587E-14
Pb-210+D	äDSR(j)		1.515E+00	1.505E+00	1.414E+00	1.119E+00	5.723E-01	5.482E-02	6.734E-05	2.451E-14
Po-210	Po-210	1.000E+00	4.446E-02	6.971E-03	1.712E-04	3.973E-10	3.170E-26	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	4.826E+00	4.820E+00	4.806E+00	4.760E+00	4.629E+00	4.198E+00	3.177E+00	1.197E+00
Ra-226+D	Pb-210+D	1.000E+00	2.636E-02	7.098E-02	1.544E-01	4.043E-01	8.528E-01	1.187E+00	9.355E-01	3.526E-01
Ra-226+D	Po-210	1.000E+00	1.055E-03	4.206E-03	1.125E-02	3.267E-02	7.115E-02	1.000E-01	7.884E-02	2.973E-02
Ra-226+D	äDSR(j)		4.854E+00	4.895E+00	4.972E+00	5.197E+00	5.553E+00	5.486E+00	4.191E+00	1.580E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.650E+01	1.661E+01	1.768E+01	2.235E+01	4.368E+01	4.561E+02	3.713E+05	*7.634E+13	
Po-210	5.623E+02	3.586E+03	1.460E+05	6.292E+10	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	5.151E+00	5.107E+00	5.028E+00	4.811E+00	4.502E+00	4.557E+00	5.965E+00	1.583E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Pb-210	1.000E+00	0.000E+00	1.515E+00	1.650E+01	1.515E+00	1.650E+01
Po-210	1.000E+00	0.000E+00	4.446E-02	5.623E+02	4.446E-02	5.623E+02
Ra-226	1.000E+00	54.3 ñ 0.1	5.658E+00	4.419E+00	4.854E+00	5.151E+00
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.440E+00	1.393E+00	1.303E+00	1.030E+00	5.271E-01	5.049E-02	6.203E-05	8.641E-15	
Pb-210	Ra-226	1.000E+00	2.636E-02	7.098E-02	1.544E-01	4.043E-01	8.528E-01	1.187E+00	9.355E-01	3.526E-01	
Pb-210	äDOSE(j)		1.467E+00	1.464E+00	1.457E+00	1.435E+00	1.380E+00	1.238E+00	9.355E-01	3.526E-01	
Po-210	Pb-210	1.000E+00	7.475E-02	1.123E-01	1.114E-01	8.828E-02	4.516E-02	4.326E-03	5.314E-06	1.587E-14	
Po-210	Po-210	1.000E+00	4.446E-02	6.971E-03	1.712E-04	3.973E-10	3.170E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	1.055E-03	4.206E-03	1.125E-02	3.267E-02	7.115E-02	1.000E-01	7.884E-02	2.973E-02	
Po-210	äDOSE(j)		1.203E-01	1.235E-01	1.229E-01	1.210E-01	1.163E-01	1.043E-01	7.884E-02	2.973E-02	
Ra-226	Ra-226	1.000E+00	4.826E+00	4.820E+00	4.806E+00	4.760E+00	4.629E+00	4.198E+00	3.177E+00	1.197E+00	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.39 seconds

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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
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Summary : RESRAD Harshaw OU2 Model AF 10000 SM Ra-226

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)

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

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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
R011	Area of contaminated zone (m**2)	1.000E+04	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	SUBMFRACT
R011	Length parallel to aquifer flow (m)	1.050E+02	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	BRDL
R011	Time since placement of material (yr)	0.000E+00	TI
R011	Times for calculations (yr)	1.000E+00	T(2)
R011	Times for calculations (yr)	3.000E+00	T(3)
R011	Times for calculations (yr)	1.000E+01	T(4)
R011	Times for calculations (yr)	3.000E+01	T(5)
R011	Times for calculations (yr)	1.000E+02	T(6)
R011	Times for calculations (yr)	3.000E+02	T(7)
R011	Times for calculations (yr)	1.000E+03	T(8)
R011	Times for calculations (yr)	not used	T(9)
R011	Times for calculations (yr)	not used	T(10)
R012	Initial principal radionuclide (pCi/g): Pb-210	1.000E+00	S1(1)
R012	Initial principal radionuclide (pCi/g): Po-210	1.000E+00	S1(2)
R012	Initial principal radionuclide (pCi/g): Ra-226	1.000E+00	S1(3)
R012	Concentration in groundwater (pCi/L): Pb-210	not used	W1(1)
R012	Concentration in groundwater (pCi/L): Po-210	not used	W1(2)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	W1(3)
R013	Cover depth (m)	0.000E+00	COVER0
R013	Density of cover material (g/cm**3)	not used	DENSCV
R013	Cover depth erosion rate (m/yr)	not used	VCV
R013	Density of contaminated zone (g/cm**3)	1.330E+00	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	VCZ
R013	Contaminated zone total porosity	5.000E-01	TPCZ
R013	Contaminated zone field capacity	2.000E-01	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	HCCZ
R013	Contaminated zone b parameter	4.900E+00	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	WIND
R013	Humidity in air (g/m**3)	not used	HUMID
R013	Evapotranspiration coefficient	4.950E-01	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	PRECIP
R013	Irrigation (m/yr)	2.000E-01	RI
R013	Irrigation mode	overhead	IDITCH
R013	Runoff coefficient	2.000E-01	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	WAREA
R013	Accuracy for water/soil computations	1.000E-03	EPS
R014	Density of saturated zone (g/cm**3)	1.720E+00	DENSAQ
R014	Saturated zone total porosity	3.500E-01	TPSZ
R014	Saturated zone effective porosity	1.800E-01	EPSZ
R014	Saturated zone field capacity	1.000E-01	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	HGWT
R014	Saturated zone b parameter	4.400E+00	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
XXX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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 waterintake for milk (L/day)	not used 1.600E+02	--- LWI6
R019	Livestock soil intake (kg/day)	not used 5.000E-01	--- LSI

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 10000.00 square meters	Pb-210 1.000E+00
Thickness: 1.50 meters	Po-210 1.000E+00
Cover Depth: 0.00 meters	Ra-226 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.512E+00	6.506E+00	6.484E+00	6.412E+00	6.219E+00	5.626E+00	4.256E+00	1.604E+00
M(t):	2.605E-01	2.602E-01	2.594E-01	2.565E-01	2.488E-01	2.251E-01	1.703E-01	6.417E-02

Maximum TDOSE(t): 6.512E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.962E-03	0.0003	1.371E-04	0.0000	0.000E+00	0.0000	1.344E+00	0.2064	0.000E+00	0.0000	0.000E+00	0.0000	1.689E-01	0.0259
Po-210	7.641E-06	0.0000	3.159E-05	0.0000	0.000E+00	0.0000	2.124E-02	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	2.319E-02	0.0036
Ra-226	3.595E+00	0.5520	6.544E-05	0.0000	0.000E+00	0.0000	1.320E+00	0.2026	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-02	0.0058
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.597E+00	0.5523	2.341E-04	0.0000	0.000E+00	0.0000	2.685E+00	0.4123	0.000E+00	0.0000	0.000E+00	0.0000	2.300E-01	0.0353

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.515E+00	0.2327
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.447E-02	0.0068
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.952E+00	0.7605
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.512E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Ra-226

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10000 SM RA-226.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.904E-03	0.0003	1.583E-04	0.0000	0.000E+00	0.0000	1.321E+00	0.2031	0.000E+00	0.0000	0.000E+00	0.0000	1.822E-01	0.0280
Po-210	1.198E-06	0.0000	4.952E-06	0.0000	0.000E+00	0.0000	3.331E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	3.635E-03	0.0006
Ra-226	3.590E+00	0.5518	7.005E-05	0.0000	0.000E+00	0.0000	1.360E+00	0.2090	0.000E+00	0.0000	0.000E+00	0.0000	4.343E-02	0.0067
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.592E+00	0.5521	2.333E-04	0.0000	0.000E+00	0.0000	2.684E+00	0.4126	0.000E+00	0.0000	0.000E+00	0.0000	2.293E-01	0.0352

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.505E+00	0.2314
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.972E-03	0.0011
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.993E+00	0.7675
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.506E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.781E-03	0.0003	1.526E-04	0.0000	0.000E+00	0.0000	1.239E+00	0.1910	0.000E+00	0.0000	0.000E+00	0.0000	1.737E-01	0.0268
Po-210	2.941E-08	0.0000	1.216E-07	0.0000	0.000E+00	0.0000	8.179E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.927E-05	0.0000
Ra-226	3.580E+00	0.5521	7.958E-05	0.0000	0.000E+00	0.0000	1.436E+00	0.2214	0.000E+00	0.0000	0.000E+00	0.0000	5.441E-02	0.0084
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.582E+00	0.5523	2.323E-04	0.0000	0.000E+00	0.0000	2.674E+00	0.4124	0.000E+00	0.0000	0.000E+00	0.0000	2.282E-01	0.0352

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.414E+00	0.2181
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.712E-04	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.070E+00	0.7819
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.484E+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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.409E-03	0.0002	1.208E-04	0.0000	0.000E+00	0.0000	9.797E-01	0.1528	0.000E+00	0.0000	0.000E+00	0.0000	1.375E-01	0.0214
Po-210	6.827E-14	0.0000	2.822E-13	0.0000	0.000E+00	0.0000	1.898E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.072E-10	0.0000
Ra-226	3.545E+00	0.5529	1.083E-04	0.0000	0.000E+00	0.0000	1.661E+00	0.2590	0.000E+00	0.0000	0.000E+00	0.0000	8.742E-02	0.0136
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	3.547E+00	0.5531	2.290E-04	0.0000	0.000E+00	0.0000	2.640E+00	0.4118	0.000E+00	0.0000	0.000E+00	0.0000	2.249E-01	0.0351

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.119E+00	0.1745
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.974E-10	0.0000
Ra-226	0.000E+00	0.0000	0.000E+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+00	0.8255
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.412E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	7.208E-04	0.0001	6.179E-05	0.0000	0.000E+00	0.0000	5.012E-01	0.0806	0.000E+00	0.0000	0.000E+00	0.0000	7.034E-02	0.0113
Po-210	5.446E-30	0.0000	2.252E-29	0.0000	0.000E+00	0.0000	1.514E-26	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.653E-26	0.0000
Ra-226	3.449E+00	0.5545	1.592E-04	0.0000	0.000E+00	0.0000	2.052E+00	0.3299	0.000E+00	0.0000	0.000E+00	0.0000	1.463E-01	0.0235
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.449E+00	0.5546	2.210E-04	0.0000	0.000E+00	0.0000	2.553E+00	0.4105	0.000E+00	0.0000	0.000E+00	0.0000	2.167E-01	0.0348

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.723E-01	0.0920
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.170E-26	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.647E+00	0.9080
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.219E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	6.904E-05	0.0000	5.918E-06	0.0000	0.000E+00	0.0000	4.801E-02	0.0085	0.000E+00	0.0000	0.000E+00	0.0000	6.737E-03	0.0012
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	3.129E+00	0.5560	1.929E-04	0.0000	0.000E+00	0.0000	2.255E+00	0.4008	0.000E+00	0.0000	0.000E+00	0.0000	1.880E-01	0.0334
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	3.129E+00	0.5561	1.988E-04	0.0000	0.000E+00	0.0000	2.303E+00	0.4093	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-01	0.0346

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.235E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.482E-02	0.0097
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.642E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.572E+00	0.9903
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.877E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.626E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	8.482E-08	0.0000	7.271E-09	0.0000	0.000E+00	0.0000	5.898E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.276E-06	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	2.368E+00	0.5562	1.503E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4091	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-01	0.0346
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.368E+00	0.5562	1.503E-04	0.0000	0.000E+00	0.0000	1.741E+00	0.4092	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-01	0.0346

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.130E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.734E-05	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.047E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.256E+00	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.178E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.256E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	5.512E-18	0.0000	4.725E-19	0.0000	0.000E+00	0.0000	3.831E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.378E-16	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	8.924E-01	0.5563	5.666E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4091	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-02	0.0346
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	8.924E-01	0.5563	5.666E-05	0.0000	0.000E+00	0.0000	6.563E-01	0.4091	0.000E+00	0.0000	0.000E+00	0.0000	5.548E-02	0.0346

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.013E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.451E-14	0.0000
Po-210	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Ra-226	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.604E+00	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.886E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.604E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Pb-210+D	Pb-210+D	1.000E+00	1.441E+00	1.393E+00	1.303E+00	1.030E+00	5.272E-01	5.049E-02	6.203E-05	8.642E-15
Pb-210+D	Po-210	1.000E+00	7.476E-02	1.124E-01	1.115E-01	8.829E-02	4.517E-02	4.326E-03	5.315E-06	1.587E-14
Pb-210+D	äDSR(j)		1.515E+00	1.505E+00	1.414E+00	1.119E+00	5.723E-01	5.482E-02	6.734E-05	2.451E-14
Po-210	Po-210	1.000E+00	4.447E-02	6.972E-03	1.712E-04	3.974E-10	3.170E-26	0.000E+00	0.000E+00	0.000E+00
Ra-226+D	Ra-226+D	1.000E+00	4.925E+00	4.918E+00	4.904E+00	4.857E+00	4.723E+00	4.284E+00	3.242E+00	1.222E+00
Ra-226+D	Pb-210+D	1.000E+00	2.636E-02	7.099E-02	1.544E-01	4.043E-01	8.529E-01	1.187E+00	9.355E-01	3.526E-01
Ra-226+D	Po-210	1.000E+00	1.055E-03	4.207E-03	1.125E-02	3.268E-02	7.116E-02	1.000E-01	7.885E-02	2.973E-02
Ra-226+D	äDSR(j)		4.952E+00	4.993E+00	5.070E+00	5.294E+00	5.647E+00	5.572E+00	4.256E+00	1.604E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life 6 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.650E+01	1.661E+01	1.768E+01	2.235E+01	4.368E+01	4.560E+02	3.712E+05	*7.634E+13	
Po-210	5.622E+02	3.586E+03	1.460E+05	6.292E+10	*4.494E+15	*4.494E+15	*4.494E+15	*4.494E+15	
Ra-226	5.048E+00	5.007E+00	4.931E+00	4.723E+00	4.427E+00	4.487E+00	5.874E+00	1.558E+01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAA	AAAAAA	AAAAAAAAAAAAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Pb-210	1.000E+00	0.000E+00	1.515E+00	1.650E+01	1.515E+00	1.650E+01
Po-210	1.000E+00	0.000E+00	4.447E-02	5.622E+02	4.447E-02	5.622E+02
Ra-226	1.000E+00	53.7 ñ 0.1	5.749E+00	4.348E+00	4.952E+00	5.048E+00
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.441E+00	1.393E+00	1.303E+00	1.030E+00	5.272E-01	5.049E-02	6.203E-05	8.642E-15	
Pb-210	Ra-226	1.000E+00	2.636E-02	7.099E-02	1.544E-01	4.043E-01	8.529E-01	1.187E+00	9.355E-01	3.526E-01	
Pb-210	äDOSE(j)		1.467E+00	1.464E+00	1.457E+00	1.435E+00	1.380E+00	1.238E+00	9.356E-01	3.526E-01	
Po-210	Pb-210	1.000E+00	7.476E-02	1.124E-01	1.115E-01	8.829E-02	4.517E-02	4.326E-03	5.315E-06	1.587E-14	
Po-210	Po-210	1.000E+00	4.447E-02	6.972E-03	1.712E-04	3.974E-10	3.170E-26	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	1.055E-03	4.207E-03	1.125E-02	3.268E-02	7.116E-02	1.000E-01	7.885E-02	2.973E-02	
Po-210	äDOSE(j)		1.203E-01	1.235E-01	1.229E-01	1.210E-01	1.163E-01	1.043E-01	7.885E-02	2.973E-02	
Ra-226	Ra-226	1.000E+00	4.925E+00	4.918E+00	4.904E+00	4.857E+00	4.723E+00	4.284E+00	3.242E+00	1.222E+00	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Pb-210	Pb-210	1.000E+00	1.000E+00	9.670E-01	9.044E-01	7.153E-01	3.659E-01	3.505E-02	4.306E-05	2.798E-15	
Pb-210	Ra-226	1.000E+00	0.000E+00	3.055E-02	8.853E-02	2.622E-01	5.740E-01	8.080E-01	6.371E-01	2.402E-01	
Pb-210	äS(j):		1.000E+00	9.976E-01	9.929E-01	9.774E-01	9.400E-01	8.430E-01	6.371E-01	2.402E-01	
Po-210	Pb-210	1.000E+00	0.000E+00	8.146E-01	9.053E-01	7.191E-01	3.679E-01	3.524E-02	4.329E-05	2.813E-15	
Po-210	Po-210	1.000E+00	1.000E+00	1.567E-01	3.848E-03	8.932E-09	7.126E-25	0.000E+00	0.000E+00	0.000E+00	
Po-210	Ra-226	1.000E+00	0.000E+00	1.650E-02	7.226E-02	2.469E-01	5.609E-01	7.976E-01	6.293E-01	2.373E-01	
Po-210	äS(j):		1.000E+00	9.879E-01	9.814E-01	9.660E-01	9.288E-01	8.329E-01	6.294E-01	2.373E-01	
Ra-226	Ra-226	1.000E+00	1.000E+00	9.986E-01	9.958E-01	9.862E-01	9.591E-01	8.699E-01	6.583E-01	2.481E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESRAD.EXE execution time = 1.39 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(4,2)

#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 Harshaw OU2 Model AF 1 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TH-230.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)	1.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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
=====					

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	HCUZ(1)
R016	Distribution coefficients for Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	3.300E+03	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	MLINH
R017	Exposure duration	3.000E+01	ED
R017	Shielding factor, inhalation	4.000E-01	SHF3
R017	Shielding factor, external gamma	4.000E-01	SHF1
R017	Fraction of time spent indoors	6.550E-01	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	FOTD
R017	Shape factor flag, external gamma	1.000E+00	>0 shows circular AREA. FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 1 SM Th-230

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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	active
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 Harshaw OU2 Model AF 1 SM Th-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.476E-02	1.550E-02	1.703E-02	2.287E-02	4.232E-02	1.200E-01	3.147E-01	6.697E-01
M(t):	5.902E-04	6.199E-04	6.813E-04	9.148E-04	1.693E-03	4.800E-03	1.259E-02	2.679E-02

Maximum TDOSE(t): 6.697E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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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.
Th-230	1.308E-04	0.0089	9.024E-04	0.0612	0.000E+00	0.0000	1.371E-02	0.9290	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-05	0.0010
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.308E-04	0.0089	9.024E-04	0.0612	0.000E+00	0.0000	1.371E-02	0.9290	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-05	0.0010

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.
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	1.476E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.476E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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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.
Th-230	2.948E-04	0.0190	9.023E-04	0.0582	0.000E+00	0.0000	1.429E-02	0.9218	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-05	0.0010
Total	2.948E-04	0.0190	9.023E-04	0.0582	0.000E+00	0.0000	1.429E-02	0.9218	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-05	0.0010

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.
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	1.550E-02	1.0000
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	1.550E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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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 = 3.000E+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.
Th-230	6.221E-04	0.0365	9.022E-04	0.0530	0.000E+00	0.0000	1.549E-02	0.9096	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-05	0.0009
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	6.221E-04	0.0365	9.022E-04	0.0530	0.000E+00	0.0000	1.549E-02	0.9096	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-05	0.0009

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.703E-02	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	1.703E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TH-230.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+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.
Th-230	1.760E-03	0.0770	9.018E-04	0.0394	0.000E+00	0.0000	2.019E-02	0.8830	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-05	0.0007
Total	1.760E-03	0.0770	9.018E-04	0.0394	0.000E+00	0.0000	2.019E-02	0.8830	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-05	0.0007

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+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.
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	2.287E-02	1.0000
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	2.287E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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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 = 3.000E+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.
Th-230	4.948E-03	0.1169	9.007E-04	0.0213	0.000E+00	0.0000	3.645E-02	0.8614	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-05	0.0004
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.948E-03	0.1169	9.007E-04	0.0213	0.000E+00	0.0000	3.645E-02	0.8614	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-05	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	4.232E-02	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	4.232E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.539E-02	0.1283	8.976E-04	0.0075	0.000E+00	0.0000	1.037E-01	0.8641	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-05	0.0002
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.539E-02	0.1283	8.976E-04	0.0075	0.000E+00	0.0000	1.037E-01	0.8641	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-05	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.200E-01	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	1.200E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TH-230.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	3.986E-02	0.1267	8.885E-04	0.0028	0.000E+00	0.0000	2.739E-01	0.8704	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-05	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.986E-02	0.1267	8.885E-04	0.0028	0.000E+00	0.0000	2.739E-01	0.8704	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-05	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.652E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.147E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.652E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.147E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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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.
Th-230	8.435E-02	0.1259	8.491E-04	0.0013	0.000E+00	0.0000	5.845E-01	0.8727	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-05	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	8.435E-02	0.1259	8.491E-04	0.0013	0.000E+00	0.0000	5.845E-01	0.8727	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-05	0.0001

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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.667E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.697E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.667E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.697E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-230

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide	Parent	THF(i)	DOSE j,t), mrem/yr								
(j)	(i)		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.441E-02	1.441E-02	1.440E-02	1.440E-02	1.437E-02	1.429E-02	1.405E-02	1.326E-02	
Ra-226	Th-230	1.000E+00	3.441E-04	1.067E-03	2.513E-03	7.539E-03	2.162E-02	6.773E-02	1.758E-01	3.721E-01	
Pb-210	Th-230	1.000E+00	3.836E-06	2.319E-05	1.119E-04	8.898E-04	6.002E-03	3.599E-02	1.183E-01	2.694E-01	
Po-210	Th-230	1.000E+00	1.025E-07	8.284E-07	4.966E-06	4.574E-05	3.251E-04	1.985E-03	6.555E-03	1.494E-02	

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

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide	Parent	THF(i)	S(j,t), pCi/g								
(j)	(i)		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	

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

RESRASCALC.EXE execution time = 1.09 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5 Ra-226D , fish D-5 Ra-226D , crustacea and mollusks D-5 D-5 Th-230 , fish D-5 Th-230 , crustacea and mollusks				
		5.000E+01	5.000E+01	BIOFAC (3,1)
		2.500E+02	2.500E+02	BIOFAC (3,2)
		1.000E+02	1.000E+02	BIOFAC (4,1)
		5.000E+02	5.000E+02	BIOFAC (4,2)

#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 Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.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)	3.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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
=====					

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
=====					
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 3 SM Th-230

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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	active
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 Harshaw OU2 Model AF 3 SM Th-230

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	3.00 square meters	Th-230	1.000E+00
Thickness:	1.50 meters		
Cover Depth:	0.00 meters		

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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.506E-02	1.600E-02	1.794E-02	2.518E-02	4.855E-02	1.391E-01	3.639E-01	7.737E-01
M(t):	6.023E-04	6.400E-04	7.176E-04	1.007E-03	1.942E-03	5.563E-03	1.456E-02	3.095E-02

Maximum TDOSE(t): 7.737E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.861E-04	0.0190	1.018E-03	0.0676	0.000E+00	0.0000	1.371E-02	0.9105	0.000E+00	0.0000	0.000E+00	0.0000	4.412E-05	0.0029
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.861E-04	0.0190	1.018E-03	0.0676	0.000E+00	0.0000	1.371E-02	0.9105	0.000E+00	0.0000	0.000E+00	0.0000	4.412E-05	0.0029

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.506E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.506E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

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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.
Th-230	6.519E-04	0.0407	1.017E-03	0.0636	0.000E+00	0.0000	1.429E-02	0.8929	0.000E+00	0.0000	0.000E+00	0.0000	4.417E-05	0.0028
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	6.519E-04	0.0407	1.017E-03	0.0636	0.000E+00	0.0000	1.429E-02	0.8929	0.000E+00	0.0000	0.000E+00	0.0000	4.417E-05	0.0028

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.
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	1.600E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.600E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.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 = 3.000E+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.
Th-230	1.382E-03	0.0770	1.017E-03	0.0567	0.000E+00	0.0000	1.550E-02	0.8638	0.000E+00	0.0000	0.000E+00	0.0000	4.429E-05	0.0025
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.382E-03	0.0770	1.017E-03	0.0567	0.000E+00	0.0000	1.550E-02	0.8638	0.000E+00	0.0000	0.000E+00	0.0000	4.429E-05	0.0025

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.794E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	1.794E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.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+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.
Th-230	3.920E-03	0.1557	1.017E-03	0.0404	0.000E+00	0.0000	2.019E-02	0.8021	0.000E+00	0.0000	0.000E+00	0.0000	4.492E-05	0.0018
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.920E-03	0.1557	1.017E-03	0.0404	0.000E+00	0.0000	2.019E-02	0.8021	0.000E+00	0.0000	0.000E+00	0.0000	4.492E-05	0.0018

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+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.
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	2.518E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.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 = 3.000E+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.
Th-230	1.103E-02	0.2272	1.016E-03	0.0209	0.000E+00	0.0000	3.645E-02	0.7509	0.000E+00	0.0000	0.000E+00	0.0000	4.797E-05	0.0010
Total	1.103E-02	0.2272	1.016E-03	0.0209	0.000E+00	0.0000	3.645E-02	0.7509	0.000E+00	0.0000	0.000E+00	0.0000	4.797E-05	0.0010

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	4.855E-02	1.0000
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	4.855E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.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.
Th-230	3.433E-02	0.2468	1.012E-03	0.0073	0.000E+00	0.0000	1.037E-01	0.7455	0.000E+00	0.0000	0.000E+00	0.0000	6.385E-05	0.0005
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.433E-02	0.2468	1.012E-03	0.0073	0.000E+00	0.0000	1.037E-01	0.7455	0.000E+00	0.0000	0.000E+00	0.0000	6.385E-05	0.0005

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.
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	1.391E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.391E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	8.890E-02	0.2443	1.002E-03	0.0028	0.000E+00	0.0000	2.739E-01	0.7527	0.000E+00	0.0000	0.000E+00	0.0000	1.063E-04	0.0003
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	8.890E-02	0.2443	1.002E-03	0.0028	0.000E+00	0.0000	2.739E-01	0.7527	0.000E+00	0.0000	0.000E+00	0.0000	1.063E-04	0.0003

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.096E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.639E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.096E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.639E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.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.
Th-230	1.881E-01	0.2431	9.574E-04	0.0012	0.000E+00	0.0000	5.845E-01	0.7554	0.000E+00	0.0000	0.000E+00	0.0000	1.830E-04	0.0002
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.881E-01	0.2431	9.574E-04	0.0012	0.000E+00	0.0000	5.845E-01	0.7554	0.000E+00	0.0000	0.000E+00	0.0000	1.830E-04	0.0002

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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.700E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.737E-01	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.700E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.737E-01	1.0000

Sum of all water independent and dependent pathways.

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
Th-230	1.000E+00	1.000E+03	7.737E-01	3.231E+01	7.737E-01	3.231E+01
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-230.RAD

Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide	Parent	THF(i)	DOSE j,t), mrem/yr									
(j)	(i)		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Th-230	Th-230	1.000E+00	1.461E-02	1.461E-02	1.460E-02	1.460E-02	1.457E-02	1.449E-02	1.425E-02	1.344E-02		
Ra-226	Th-230	1.000E+00	4.452E-04	1.370E-03	3.218E-03	9.645E-03	2.765E-02	8.661E-02	2.247E-01	4.758E-01		
Pb-210	Th-230	1.000E+00	3.837E-06	2.319E-05	1.119E-04	8.902E-04	6.004E-03	3.600E-02	1.184E-01	2.695E-01		
Po-210	Th-230	1.000E+00	1.026E-07	8.293E-07	4.973E-06	4.581E-05	3.255E-04	1.988E-03	6.564E-03	1.496E-02		

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

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide	Parent	THF(i)	S(j,t), pCi/g									
(j)	(i)		t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01		
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01		
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01		
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01		

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

RESRASCALC.EXE execution time = 1.06 seconds

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Dose Conversion Factor (and Related) Parameter Summary ...	2
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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-230

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(4,2)

#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 Harshaw OU2 Model AF 10 SM Th-230

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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)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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
=====					

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
=====					
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 10 SM Th-230

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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	active
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: 10.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.561E-02	1.694E-02	1.967E-02	2.964E-02	6.069E-02	1.764E-01	4.601E-01	9.770E-01
M(t):	6.242E-04	6.777E-04	7.868E-04	1.186E-03	2.427E-03	7.055E-03	1.840E-02	3.908E-02

Maximum TDOSE(t): 9.770E-01 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-230

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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.
Th-230	5.895E-04	0.0378	1.160E-03	0.0743	0.000E+00	0.0000	1.371E-02	0.8785	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-04	0.0094
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.895E-04	0.0378	1.160E-03	0.0743	0.000E+00	0.0000	1.371E-02	0.8785	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-04	0.0094

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.
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	1.561E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.561E-02	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.
Th-230	1.350E-03	0.0796	1.160E-03	0.0684	0.000E+00	0.0000	1.429E-02	0.8432	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-04	0.0087
Total	1.350E-03	0.0796	1.160E-03	0.0684	0.000E+00	0.0000	1.429E-02	0.8432	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-04	0.0087

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.
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	1.694E-02	1.0000
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	1.694E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-230

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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 = 3.000E+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.
Th-230	2.866E-03	0.1457	1.160E-03	0.0590	0.000E+00	0.0000	1.550E-02	0.7878	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-04	0.0075
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.866E-03	0.1457	1.160E-03	0.0590	0.000E+00	0.0000	1.550E-02	0.7878	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-04	0.0075

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.967E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.967E-02	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+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.
Th-230	8.140E-03	0.2746	1.159E-03	0.0391	0.000E+00	0.0000	2.020E-02	0.6813	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-04	0.0051
Total	8.140E-03	0.2746	1.159E-03	0.0391	0.000E+00	0.0000	2.020E-02	0.6813	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-04	0.0051

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+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.
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	2.964E-02	1.0000
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	2.964E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-230

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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 = 3.000E+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.
Th-230	2.291E-02	0.3776	1.158E-03	0.0191	0.000E+00	0.0000	3.645E-02	0.6007	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-04	0.0026
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.291E-02	0.3776	1.158E-03	0.0191	0.000E+00	0.0000	3.645E-02	0.6007	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-04	0.0026

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	6.069E-02	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.069E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-230

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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.
Th-230	7.131E-02	0.4044	1.154E-03	0.0065	0.000E+00	0.0000	1.037E-01	0.5879	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-04	0.0012
Total	7.131E-02	0.4044	1.154E-03	0.0065	0.000E+00	0.0000	1.037E-01	0.5879	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-04	0.0012

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.
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	1.764E-01	1.0000
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	1.764E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-230

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.847E-01	0.4014	1.142E-03	0.0025	0.000E+00	0.0000	2.739E-01	0.5953	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-04	0.0008
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.847E-01	0.4014	1.142E-03	0.0025	0.000E+00	0.0000	2.739E-01	0.5953	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-04	0.0008

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.652E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.601E-01	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.652E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.601E-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.
Th-230	3.909E-01	0.4001	1.091E-03	0.0011	0.000E+00	0.0000	5.845E-01	0.5982	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-04	0.0006
Total	3.909E-01	0.4001	1.091E-03	0.0011	0.000E+00	0.0000	5.845E-01	0.5982	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-04	0.0006

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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.667E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.770E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.667E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.770E-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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
Th-230	Th-230	1.000E+00	1.496E-02	1.496E-02	1.496E-02	1.495E-02	1.492E-02	1.484E-02	1.459E-02	1.377E-02	
Th-230	Ra-226+D	1.000E+00	6.425E-04	1.962E-03	4.597E-03	1.376E-02	3.942E-02	1.235E-01	3.204E-01	6.784E-01	
Th-230	Pb-210+D	1.000E+00	3.840E-06	2.322E-05	1.120E-04	8.912E-04	6.011E-03	3.604E-02	1.185E-01	2.698E-01	
Th-230	Po-210	1.000E+00	1.028E-07	8.323E-07	4.994E-06	4.602E-05	3.271E-04	1.998E-03	6.597E-03	1.504E-02	
Th-230	äDSR(j)		1.561E-02	1.694E-02	1.967E-02	2.964E-02	6.069E-02	1.764E-01	4.601E-01	9.770E-01	
The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	1.602E+03	1.475E+03	1.271E+03	8.433E+02	4.120E+02	1.418E+02	5.434E+01	2.559E+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 = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Th-230	1.000E+00	1.000E+03	9.770E-01	2.559E+01	9.770E-01	2.559E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.496E-02	1.496E-02	1.496E-02	1.495E-02	1.492E-02	1.484E-02	1.459E-02	1.377E-02	
Ra-226	Th-230	1.000E+00	6.425E-04	1.962E-03	4.597E-03	1.376E-02	3.942E-02	1.235E-01	3.204E-01	6.784E-01	
Pb-210	Th-230	1.000E+00	3.840E-06	2.322E-05	1.120E-04	8.912E-04	6.011E-03	3.604E-02	1.185E-01	2.698E-01	
Po-210	Th-230	1.000E+00	1.028E-07	8.323E-07	4.994E-06	4.602E-05	3.271E-04	1.998E-03	6.597E-03	1.504E-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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
THF(i) is the thread fraction of the parent nuclide.											

RESCALC.EXE execution time = 1.07 seconds

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Dose Conversion Factor (and Related) Parameter Summary ...	2
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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

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

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-230

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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)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)

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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
=====					
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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	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	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: 30.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.627E-02	1.790E-02	2.122E-02	3.325E-02	7.006E-02	2.047E-01	5.328E-01	1.131E+00
M(t):	6.507E-04	7.161E-04	8.488E-04	1.330E-03	2.802E-03	8.187E-03	2.131E-02	4.522E-02

Maximum TDOSE(t): 1.131E+00 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-230

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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.
Th-230	8.108E-04	0.0498	1.306E-03	0.0803	0.000E+00	0.0000	1.371E-02	0.8428	0.000E+00	0.0000	0.000E+00	0.0000	4.412E-04	0.0271
Total	8.108E-04	0.0498	1.306E-03	0.0803	0.000E+00	0.0000	1.371E-02	0.8428	0.000E+00	0.0000	0.000E+00	0.0000	4.412E-04	0.0271

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.
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	1.627E-02	1.0000
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	1.627E-02	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.
Th-230	1.867E-03	0.1043	1.306E-03	0.0729	0.000E+00	0.0000	1.429E-02	0.7981	0.000E+00	0.0000	0.000E+00	0.0000	4.417E-04	0.0247
Total	1.867E-03	0.1043	1.306E-03	0.0729	0.000E+00	0.0000	1.429E-02	0.7981	0.000E+00	0.0000	0.000E+00	0.0000	4.417E-04	0.0247

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.
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	1.790E-02	1.0000
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	1.790E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-230

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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 = 3.000E+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.
Th-230	3.974E-03	0.1873	1.306E-03	0.0615	0.000E+00	0.0000	1.550E-02	0.7303	0.000E+00	0.0000	0.000E+00	0.0000	4.429E-04	0.0209
Total	3.974E-03	0.1873	1.306E-03	0.0615	0.000E+00	0.0000	1.550E-02	0.7303	0.000E+00	0.0000	0.000E+00	0.0000	4.429E-04	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 = 3.000E+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.
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	2.122E-02	1.0000
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	2.122E-02	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+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.
Th-230	1.130E-02	0.3398	1.305E-03	0.0393	0.000E+00	0.0000	2.020E-02	0.6074	0.000E+00	0.0000	0.000E+00	0.0000	4.492E-04	0.0135
Total	1.130E-02	0.3398	1.305E-03	0.0393	0.000E+00	0.0000	2.020E-02	0.6074	0.000E+00	0.0000	0.000E+00	0.0000	4.492E-04	0.0135

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+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.
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	3.325E-02	1.0000
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	3.325E-02	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 = 3.000E+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.
Th-230	3.182E-02	0.4542	1.304E-03	0.0186	0.000E+00	0.0000	3.645E-02	0.5203	0.000E+00	0.0000	0.000E+00	0.0000	4.797E-04	0.0068
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.182E-02	0.4542	1.304E-03	0.0186	0.000E+00	0.0000	3.645E-02	0.5203	0.000E+00	0.0000	0.000E+00	0.0000	4.797E-04	0.0068

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	7.006E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	7.006E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-230

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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.
Th-230	9.906E-02	0.4840	1.299E-03	0.0063	0.000E+00	0.0000	1.037E-01	0.5066	0.000E+00	0.0000	0.000E+00	0.0000	6.385E-04	0.0031
Total	9.906E-02	0.4840	1.299E-03	0.0063	0.000E+00	0.0000	1.037E-01	0.5066	0.000E+00	0.0000	0.000E+00	0.0000	6.385E-04	0.0031

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.
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	2.047E-01	1.0000
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	2.047E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-230

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.566E-01	0.4815	1.286E-03	0.0024	0.000E+00	0.0000	2.739E-01	0.5140	0.000E+00	0.0000	0.000E+00	0.0000	1.063E-03	0.0020
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.566E-01	0.4815	1.286E-03	0.0024	0.000E+00	0.0000	2.739E-01	0.5140	0.000E+00	0.0000	0.000E+00	0.0000	1.063E-03	0.0020

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.096E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.328E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.096E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.328E-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.
Th-230	5.430E-01	0.4803	1.229E-03	0.0011	0.000E+00	0.0000	5.845E-01	0.5170	0.000E+00	0.0000	0.000E+00	0.0000	1.830E-03	0.0016
Total	5.430E-01	0.4803	1.229E-03	0.0011	0.000E+00	0.0000	5.845E-01	0.5170	0.000E+00	0.0000	0.000E+00	0.0000	1.830E-03	0.0016

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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.700E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.700E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.131E+00	1.0000

Sum of all water independent and dependent pathways.

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
Th-230	1.000E+00	1.000E+03	1.131E+00	2.211E+01	1.131E+00	2.211E+01
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.547E-02	1.547E-02	1.547E-02	1.546E-02	1.544E-02	1.535E-02	1.509E-02	1.424E-02
Ra-226	Th-230	1.000E+00		7.907E-04	2.406E-03	5.632E-03	1.685E-02	4.827E-02	1.512E-01	3.923E-01	8.305E-01
Pb-210	Th-230	1.000E+00		3.848E-06	2.327E-05	1.123E-04	8.933E-04	6.026E-03	3.613E-02	1.188E-01	2.705E-01
Po-210	Th-230	1.000E+00		1.036E-07	8.407E-07	5.055E-06	4.663E-05	3.316E-04	2.025E-03	6.687E-03	1.524E-02
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.											

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

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

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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)	1.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	HCUZ(1)
R016	Distribution coefficients for Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	3.300E+03	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	MLINH
R017	Exposure duration	3.000E+01	ED
R017	Shielding factor, inhalation	4.000E-01	SHF3
R017	Shielding factor, external gamma	4.000E-01	SHF1
R017	Fraction of time spent indoors	6.550E-01	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	FOTD
R017	Shape factor flag, external gamma	1.000E+00	>0 shows circular AREA. FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 100 SM Th-230

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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	active
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 Harshaw OU2 Model AF 100 SM Th-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 100.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	1.766E-02	1.955E-02	2.337E-02	3.714E-02	7.886E-02	2.297E-01	5.960E-01	1.263E+00
M(t):	7.066E-04	7.819E-04	9.346E-04	1.486E-03	3.155E-03	9.189E-03	2.384E-02	5.052E-02

Maximum TDOSE(t): 1.263E+00 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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.
Th-230	9.963E-04	0.0564	1.486E-03	0.0841	0.000E+00	0.0000	1.371E-02	0.7762	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-03	0.0833
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	9.963E-04	0.0564	1.486E-03	0.0841	0.000E+00	0.0000	1.371E-02	0.7762	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-03	0.0833

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.
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	1.766E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.766E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 100 SM TH-230.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.
Th-230	2.301E-03	0.1177	1.486E-03	0.0760	0.000E+00	0.0000	1.429E-02	0.7310	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-03	0.0753
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.301E-03	0.1177	1.486E-03	0.0760	0.000E+00	0.0000	1.429E-02	0.7310	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-03	0.0753

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.
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	1.955E-02	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.955E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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 = 3.000E+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.
Th-230	4.905E-03	0.2099	1.486E-03	0.0636	0.000E+00	0.0000	1.550E-02	0.6633	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-03	0.0632
Total	4.905E-03	0.2099	1.486E-03	0.0636	0.000E+00	0.0000	1.550E-02	0.6633	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-03	0.0632

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	2.337E-02	1.0000
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	2.337E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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+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.
Th-230	1.396E-02	0.3759	1.485E-03	0.0400	0.000E+00	0.0000	2.020E-02	0.5438	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-03	0.0403
Total	1.396E-02	0.3759	1.485E-03	0.0400	0.000E+00	0.0000	2.020E-02	0.5438	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-03	0.0403

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+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.
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	3.714E-02	1.0000
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	3.714E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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 = 3.000E+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.
Th-230	3.932E-02	0.4986	1.483E-03	0.0188	0.000E+00	0.0000	3.646E-02	0.4623	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-03	0.0203
Total	3.932E-02	0.4986	1.483E-03	0.0188	0.000E+00	0.0000	3.646E-02	0.4623	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-03	0.0203

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	7.886E-02	1.0000
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	7.886E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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.
Th-230	1.224E-01	0.5329	1.478E-03	0.0064	0.000E+00	0.0000	1.037E-01	0.4514	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-03	0.0093
Total	1.224E-01	0.5329	1.478E-03	0.0064	0.000E+00	0.0000	1.037E-01	0.4514	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-03	0.0093

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.
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	2.297E-01	1.0000
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	2.297E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	3.171E-01	0.5320	1.463E-03	0.0025	0.000E+00	0.0000	2.739E-01	0.4596	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-03	0.0059
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.171E-01	0.5320	1.463E-03	0.0025	0.000E+00	0.0000	2.739E-01	0.4596	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-03	0.0059

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.652E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.960E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.652E-21	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.960E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	6.711E-01	0.5313	1.398E-03	0.0011	0.000E+00	0.0000	5.845E-01	0.4627	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-03	0.0048
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	6.711E-01	0.5313	1.398E-03	0.0011	0.000E+00	0.0000	5.845E-01	0.4627	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-03	0.0048

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.667E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.667E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
Th-230	Th-230	1.000E+00	1.674E-02	1.674E-02	1.674E-02	1.673E-02	1.670E-02	1.661E-02	1.633E-02	1.541E-02	
Th-230	Ra-226+D	1.000E+00	9.159E-04	2.781E-03	6.507E-03	1.946E-02	5.574E-02	1.746E-01	4.530E-01	9.591E-01	
Th-230	Pb-210+D	1.000E+00	3.871E-06	2.343E-05	1.131E-04	9.002E-04	6.073E-03	3.641E-02	1.197E-01	2.726E-01	
Th-230	Po-210	1.000E+00	1.062E-07	8.701E-07	5.264E-06	4.875E-05	3.470E-04	2.121E-03	7.003E-03	1.596E-02	
Th-230	äDSR(j)		1.766E-02	1.955E-02	2.337E-02	3.714E-02	7.886E-02	2.297E-01	5.960E-01	1.263E+00	
The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	1.415E+03	1.279E+03	1.070E+03	6.731E+02	3.170E+02	1.088E+02	4.194E+01	1.979E+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 = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Th-230	1.000E+00	1.000E+03	1.263E+00	1.979E+01	1.263E+00	1.979E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.674E-02	1.674E-02	1.674E-02	1.673E-02	1.670E-02	1.661E-02	1.633E-02	1.541E-02	
Ra-226	Th-230	1.000E+00	9.159E-04	2.781E-03	6.507E-03	1.946E-02	5.574E-02	1.746E-01	4.530E-01	9.591E-01	
Pb-210	Th-230	1.000E+00	3.871E-06	2.343E-05	1.131E-04	9.002E-04	6.073E-03	3.641E-02	1.197E-01	2.726E-01	
Po-210	Th-230	1.000E+00	1.062E-07	8.701E-07	5.264E-06	4.875E-05	3.470E-04	2.121E-03	7.003E-03	1.596E-02	
Th-230	Th-230	1.000E+00	1.674E-02	1.674E-02	1.674E-02	1.673E-02	1.670E-02	1.661E-02	1.633E-02	1.541E-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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
THF(i) is the thread fraction of the parent nuclide.											

RESCALC.EXE execution time = 1.03 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
Time = 1.000E+03	17
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Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(4,2)

 #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 Harshaw OU2 Model AF 300 SM Th-230

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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)	3.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	HCUZ(1)
R016	Distribution coefficients for Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	3.300E+03	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	MLINH
R017	Exposure duration	3.000E+01	ED
R017	Shielding factor, inhalation	4.000E-01	SHF3
R017	Shielding factor, external gamma	4.000E-01	SHF1
R017	Fraction of time spent indoors	6.550E-01	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	FOTD
R017	Shape factor flag, external gamma	1.000E+00	>0 shows circular AREA. FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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	---	EVSND
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSND
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 Harshaw OU2 Model AF 300 SM Th-230

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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	active
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 Harshaw OU2 Model AF 300 SM Th-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 300.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.087E-02	2.287E-02	2.691E-02	4.148E-02	8.553E-02	2.444E-01	6.298E-01	1.332E+00
M(t):	8.348E-04	9.146E-04	1.076E-03	1.659E-03	3.421E-03	9.776E-03	2.519E-02	5.326E-02

Maximum TDOSE(t): 1.332E+00 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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.
Th-230	1.074E-03	0.0515	1.670E-03	0.0800	0.000E+00	0.0000	1.371E-02	0.6571	0.000E+00	0.0000	0.000E+00	0.0000	4.412E-03	0.2114
Total	1.074E-03	0.0515	1.670E-03	0.0800	0.000E+00	0.0000	1.371E-02	0.6571	0.000E+00	0.0000	0.000E+00	0.0000	4.412E-03	0.2114

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.
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	2.087E-02	1.0000
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	2.087E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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.
Th-230	2.488E-03	0.1088	1.670E-03	0.0730	0.000E+00	0.0000	1.429E-02	0.6250	0.000E+00	0.0000	0.000E+00	0.0000	4.417E-03	0.1932
Total	2.488E-03	0.1088	1.670E-03	0.0730	0.000E+00	0.0000	1.429E-02	0.6250	0.000E+00	0.0000	0.000E+00	0.0000	4.417E-03	0.1932

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.
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	2.287E-02	1.0000
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	2.287E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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 = 3.000E+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.
Th-230	5.310E-03	0.1973	1.670E-03	0.0621	0.000E+00	0.0000	1.550E-02	0.5760	0.000E+00	0.0000	0.000E+00	0.0000	4.429E-03	0.1646
Total	5.310E-03	0.1973	1.670E-03	0.0621	0.000E+00	0.0000	1.550E-02	0.5760	0.000E+00	0.0000	0.000E+00	0.0000	4.429E-03	0.1646

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	2.691E-02	1.0000
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	2.691E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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+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.
Th-230	1.512E-02	0.3646	1.669E-03	0.0402	0.000E+00	0.0000	2.020E-02	0.4869	0.000E+00	0.0000	0.000E+00	0.0000	4.492E-03	0.1083
Total	1.512E-02	0.3646	1.669E-03	0.0402	0.000E+00	0.0000	2.020E-02	0.4869	0.000E+00	0.0000	0.000E+00	0.0000	4.492E-03	0.1083

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+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.
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	4.148E-02	1.0000
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	4.148E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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 = 3.000E+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.
Th-230	4.261E-02	0.4982	1.667E-03	0.0195	0.000E+00	0.0000	3.646E-02	0.4263	0.000E+00	0.0000	0.000E+00	0.0000	4.797E-03	0.0561
Total	4.261E-02	0.4982	1.667E-03	0.0195	0.000E+00	0.0000	3.646E-02	0.4263	0.000E+00	0.0000	0.000E+00	0.0000	4.797E-03	0.0561

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.553E-02	1.0000
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	8.553E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.327E-01	0.5428	1.662E-03	0.0068	0.000E+00	0.0000	1.037E-01	0.4243	0.000E+00	0.0000	0.000E+00	0.0000	6.385E-03	0.0261
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.327E-01	0.5428	1.662E-03	0.0068	0.000E+00	0.0000	1.037E-01	0.4243	0.000E+00	0.0000	0.000E+00	0.0000	6.385E-03	0.0261

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	2.444E-01	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.444E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	3.436E-01	0.5456	1.645E-03	0.0026	0.000E+00	0.0000	2.739E-01	0.4349	0.000E+00	0.0000	0.000E+00	0.0000	1.063E-02	0.0169
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.436E-01	0.5456	1.645E-03	0.0026	0.000E+00	0.0000	2.739E-01	0.4349	0.000E+00	0.0000	0.000E+00	0.0000	1.063E-02	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 = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.096E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.298E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.096E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.298E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-230

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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.
Th-230	7.272E-01	0.5461	1.572E-03	0.0012	0.000E+00	0.0000	5.845E-01	0.4390	0.000E+00	0.0000	0.000E+00	0.0000	1.830E-02	0.0137
Total	7.272E-01	0.5461	1.572E-03	0.0012	0.000E+00	0.0000	5.845E-01	0.4390	0.000E+00	0.0000	0.000E+00	0.0000	1.830E-02	0.0137

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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.700E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.332E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.700E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.332E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
Th-230	Th-230	1.000E+00	1.989E-02	1.989E-02	1.989E-02	1.988E-02	1.984E-02	1.973E-02	1.941E-02	1.831E-02	
Th-230	Ra-226+D	1.000E+00	9.721E-04	2.950E-03	6.899E-03	2.063E-02	5.909E-02	1.851E-01	4.802E-01	1.017E+00	
Th-230	Pb-210+D	1.000E+00	3.935E-06	2.388E-05	1.154E-04	9.193E-04	6.204E-03	3.720E-02	1.223E-01	2.785E-01	
Th-230	Po-210	1.000E+00	1.137E-07	9.539E-07	5.861E-06	5.477E-05	3.911E-04	2.392E-03	7.901E-03	1.801E-02	
Th-230	äDSR(j)		2.087E-02	2.287E-02	2.691E-02	4.148E-02	8.553E-02	2.444E-01	6.298E-01	1.332E+00	
The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	1.198E+03	1.093E+03	9.291E+02	6.027E+02	2.923E+02	1.023E+02	3.970E+01	1.878E+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 = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Th-230	1.000E+00	1.000E+03	1.332E+00	1.878E+01	1.332E+00	1.878E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.989E-02	1.989E-02	1.989E-02	1.988E-02	1.984E-02	1.973E-02	1.941E-02	1.831E-02	
Ra-226	Th-230	1.000E+00	9.721E-04	2.950E-03	6.899E-03	2.063E-02	5.909E-02	1.851E-01	4.802E-01	1.017E+00	
Pb-210	Th-230	1.000E+00	3.935E-06	2.388E-05	1.154E-04	9.193E-04	6.204E-03	3.720E-02	1.223E-01	2.785E-01	
Po-210	Th-230	1.000E+00	1.137E-07	9.539E-07	5.861E-06	5.477E-05	3.911E-04	2.392E-03	7.901E-03	1.801E-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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
THF(i) is the thread fraction of the parent nuclide.											

RESCALC.EXE execution time = 1.08 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
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Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-230

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226D , fish	5.000E+01	5.000E+01	BIOFAC(3,1)
D-5	Ra-226D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(3,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(4,2)

#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 Harshaw OU2 Model AF 1000 SM Th-230

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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)	1.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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
=====					

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
=====					
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 1000 SM Th-230

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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	active
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 Harshaw OU2 Model AF 1000 SM Th-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1000.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.144E-02	3.352E-02	3.772E-02	5.292E-02	9.901E-02	2.660E-01	6.715E-01	1.410E+00
M(t):	1.258E-03	1.341E-03	1.509E-03	2.117E-03	3.961E-03	1.064E-02	2.686E-02	5.639E-02

Maximum TDOSE(t): 1.410E+00 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.
Th-230	1.121E-03	0.0357	1.896E-03	0.0603	0.000E+00	0.0000	1.371E-02	0.4362	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-02	0.4678
Total	1.121E-03	0.0357	1.896E-03	0.0603	0.000E+00	0.0000	1.371E-02	0.4362	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-02	0.4678

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.
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	3.144E-02	1.0000
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	3.144E-02	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.
Th-230	2.604E-03	0.0777	1.896E-03	0.0566	0.000E+00	0.0000	1.429E-02	0.4264	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.4393
Total	2.604E-03	0.0777	1.896E-03	0.0566	0.000E+00	0.0000	1.429E-02	0.4264	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.4393

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.
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	3.352E-02	1.0000
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	3.352E-02	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 = 3.000E+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.
Th-230	5.563E-03	0.1475	1.896E-03	0.0503	0.000E+00	0.0000	1.550E-02	0.4109	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-02	0.3914
Total	5.563E-03	0.1475	1.896E-03	0.0503	0.000E+00	0.0000	1.550E-02	0.4109	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-02	0.3914

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.772E-02	1.0000
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	3.772E-02	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+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.
Th-230	1.585E-02	0.2996	1.895E-03	0.0358	0.000E+00	0.0000	2.020E-02	0.3817	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-02	0.2829
Total	1.585E-02	0.2996	1.895E-03	0.0358	0.000E+00	0.0000	2.020E-02	0.3817	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-02	0.2829

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+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.
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	5.292E-02	1.0000
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	5.292E-02	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 = 3.000E+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.
Th-230	4.467E-02	0.4512	1.893E-03	0.0191	0.000E+00	0.0000	3.646E-02	0.3682	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.1615
Total	4.467E-02	0.4512	1.893E-03	0.0191	0.000E+00	0.0000	3.646E-02	0.3682	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.1615

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	9.901E-02	1.0000
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	9.901E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-230

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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.
Th-230	1.391E-01	0.5230	1.886E-03	0.0071	0.000E+00	0.0000	1.037E-01	0.3899	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-02	0.0800
Total	1.391E-01	0.5230	1.886E-03	0.0071	0.000E+00	0.0000	1.037E-01	0.3899	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-02	0.0800

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.
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	2.660E-01	1.0000
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	2.660E-01	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-230

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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 = 3.000E+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.
Th-230	3.603E-01	0.5366	1.867E-03	0.0028	0.000E+00	0.0000	2.739E-01	0.4079	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-02	0.0528
Total	3.603E-01	0.5366	1.867E-03	0.0028	0.000E+00	0.0000	2.739E-01	0.4079	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-02	0.0528

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.845E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.715E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.845E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.715E-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.
Th-230	7.625E-01	0.5409	1.784E-03	0.0013	0.000E+00	0.0000	5.845E-01	0.4146	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-02	0.0433
Total	7.625E-01	0.5409	1.784E-03	0.0013	0.000E+00	0.0000	5.845E-01	0.4146	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-02	0.0433

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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.410E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
Th-230	Th-230	1.000E+00	3.042E-02	3.042E-02	3.041E-02	3.040E-02	3.035E-02	3.017E-02	2.968E-02	2.800E-02	
Th-230	Ra-226+D	1.000E+00	1.012E-03	3.069E-03	7.177E-03	2.146E-02	6.146E-02	1.925E-01	4.995E-01	1.058E+00	
Th-230	Pb-210+D	1.000E+00	4.160E-06	2.543E-05	1.235E-04	9.859E-04	6.659E-03	3.994E-02	1.313E-01	2.991E-01	
Th-230	Po-210	1.000E+00	1.398E-07	1.247E-06	7.951E-06	7.585E-05	5.451E-04	3.342E-03	1.104E-02	2.518E-02	
Th-230	äDSR(j)		3.144E-02	3.352E-02	3.772E-02	5.292E-02	9.901E-02	2.660E-01	6.715E-01	1.410E+00	
The DSR includes contributions from associated (half-life > 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	7.952E+02	7.459E+02	6.627E+02	4.724E+02	2.525E+02	9.400E+01	3.723E+01	1.773E+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 = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Th-230	1.000E+00	1.000E+03	1.410E+00	1.773E+01	1.410E+00	1.773E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Th-230	Th-230	1.000E+00	3.042E-02	3.042E-02	3.041E-02	3.040E-02	3.035E-02	3.017E-02	2.968E-02	2.800E-02	
Ra-226	Th-230	1.000E+00	1.012E-03	3.069E-03	7.177E-03	2.146E-02	6.146E-02	1.925E-01	4.995E-01	1.058E+00	
Pb-210	Th-230	1.000E+00	4.160E-06	2.543E-05	1.235E-04	9.859E-04	6.659E-03	3.994E-02	1.313E-01	2.991E-01	
Po-210	Th-230	1.000E+00	1.398E-07	1.247E-06	7.951E-06	7.585E-05	5.451E-04	3.342E-03	1.104E-02	2.518E-02	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	
THF(i) is the thread fraction of the parent nuclide.											

RESCALC.EXE execution time = 1.03 seconds

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Total Dose Components	
Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
Time = 3.000E+02	16
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Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC (3,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC (3,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC (4,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC (4,2)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 104

#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.

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	3.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
=====					
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Th-230				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-230

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 3000 SM Th-230

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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	active
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 Harshaw OU2 Model AF 3000 SM Th-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3000.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.169E-02	3.380E-02	3.807E-02	5.348E-02	1.002E-01	2.691E-01	6.792E-01	1.426E+00
M(t):	1.268E-03	1.352E-03	1.523E-03	2.139E-03	4.007E-03	1.076E-02	2.717E-02	5.703E-02

Maximum TDOSE(t): 1.426E+00 mrem/yr at t = 1.000E+03 years

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	1.144E-03	0.0361	2.127E-03	0.0671	0.000E+00	0.0000	1.372E-02	0.4328	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-02	0.4640
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	1.144E-03	0.0361	2.127E-03	0.0671	0.000E+00	0.0000	1.372E-02	0.4328	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-02	0.4640

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	3.169E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.169E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-230

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Th-230	2.657E-03	0.0786	2.127E-03	0.0629	0.000E+00	0.0000	1.429E-02	0.4229	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.4356
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	2.657E-03	0.0786	2.127E-03	0.0629	0.000E+00	0.0000	1.429E-02	0.4229	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.4356

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	3.380E-02	1.0000
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	3.380E-02	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 = 3.000E+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.
Th-230	5.677E-03	0.1491	2.126E-03	0.0559	0.000E+00	0.0000	1.550E-02	0.4072	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-02	0.3878
Total	5.677E-03	0.1491	2.126E-03	0.0559	0.000E+00	0.0000	1.550E-02	0.4072	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-02	0.3878

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.807E-02	1.0000
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	3.807E-02	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+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.
Th-230	1.618E-02	0.3025	2.125E-03	0.0397	0.000E+00	0.0000	2.020E-02	0.3778	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-02	0.2800
Total	1.618E-02	0.3025	2.125E-03	0.0397	0.000E+00	0.0000	2.020E-02	0.3778	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-02	0.2800

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+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.
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	5.348E-02	1.0000
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	5.348E-02	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 = 3.000E+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.
Th-230	4.559E-02	0.4552	2.123E-03	0.0212	0.000E+00	0.0000	3.646E-02	0.3640	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.1596
Total	4.559E-02	0.4552	2.123E-03	0.0212	0.000E+00	0.0000	3.646E-02	0.3640	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.1596

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.002E-01	1.0000
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	1.002E-01	1.0000

Sum of all water independent and dependent pathways.

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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.
Th-230	1.420E-01	0.5277	2.115E-03	0.0079	0.000E+00	0.0000	1.037E-01	0.3854	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-02	0.0791
Total	1.420E-01	0.5277	2.115E-03	0.0079	0.000E+00	0.0000	1.037E-01	0.3854	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-02	0.0791

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.
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	2.691E-01	1.0000
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	2.691E-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 = 3.000E+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.
Th-230	3.678E-01	0.5415	2.094E-03	0.0031	0.000E+00	0.0000	2.739E-01	0.4033	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-02	0.0522
Total	3.678E-01	0.5415	2.094E-03	0.0031	0.000E+00	0.0000	2.739E-01	0.4033	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-02	0.0522

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.845E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.792E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.845E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.792E-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.
Th-230	7.783E-01	0.5459	2.001E-03	0.0014	0.000E+00	0.0000	5.845E-01	0.4099	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-02	0.0428
Total	7.783E-01	0.5459	2.001E-03	0.0014	0.000E+00	0.0000	5.845E-01	0.4099	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-02	0.0428

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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.426E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.426E+00	1.0000

Sum of all water independent and dependent pathways.

Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr) / (pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
Th-230	Th-230	1.000E+00	3.066E-02	3.066E-02	3.065E-02	3.064E-02	3.059E-02	3.041E-02	2.991E-02	2.822E-02	
Th-230	Ra-226D	1.000E+00	1.027E-03	3.115E-03	7.284E-03	2.178E-02	6.238E-02	1.954E-01	5.069E-01	1.073E+00	
Th-230	Pb-210D	1.000E+00	4.160E-06	2.543E-05	1.235E-04	9.860E-04	6.659E-03	3.995E-02	1.313E-01	2.991E-01	
Th-230	Po-210	1.000E+00	1.398E-07	1.247E-06	7.952E-06	7.585E-05	5.452E-04	3.342E-03	1.104E-02	2.519E-02	
Th-230	αDSR(j)		3.169E-02	3.380E-02	3.807E-02	5.348E-02	1.002E-01	2.691E-01	6.792E-01	1.426E+00	
iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	iiiiiiiiiii	
The DSR includes contributions from associated (half-life > 30 days) daughters.											

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

[illegible]

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	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
Th-230	1.000E+00	1.000E+03	1.426E+00	1.753E+01	1.426E+00	1.753E+01
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		3.066E-02	3.066E-02	3.065E-02	3.064E-02	3.059E-02	3.041E-02	2.991E-02	2.822E-02	
Ra-226	Th-230	1.000E+00		1.027E-03	3.115E-03	7.284E-03	2.178E-02	6.238E-02	1.954E-01	5.069E-01	1.073E+00	
Pb-210	Th-230	1.000E+00		4.160E-06	2.543E-05	1.235E-04	9.860E-04	6.659E-03	3.995E-02	1.313E-01	2.991E-01	
Po-210	Th-230	1.000E+00		1.398E-07	1.247E-06	7.952E-06	7.585E-05	5.452E-04	3.342E-03	1.104E-02	2.519E-02	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Th-230	Th-230	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00		0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00		0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00		0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
THF(i) is the thread fraction of the parent nuclide.												

RESCALC.EXE execution time = 1.07 seconds

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Time = 0.000E+00	10
Time = 1.000E+00	11
Time = 3.000E+00	12
Time = 1.000E+01	13
Time = 3.000E+01	14
Time = 1.000E+02	15
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Summary : RESRAD Harshaw OU2 Model AF 10000 SM Th-230

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1(1)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1(2)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1(3)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1(4)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1(5)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1(6)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1(7)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1(8)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1(9)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1(10)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1(11)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1(12)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2(1)
B-1	Po-210	9.400E-03	9.400E-03	DCF2(2)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(3)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(4)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3(1)
D-1	Po-210	1.900E-03	1.900E-03	DCF3(2)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(3)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(4)
D-34 Food transfer factors:				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(1,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(1,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(1,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(2,3)
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(3,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(3,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(3,3)
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(4,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(4,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(1,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	BIOFAC(2,2)

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

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Th-230

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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)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Th-230	1.000E+00	0.000E+00	---	S1(4)
R012	Concentration in groundwater (pCi/L): Th-230	not used	0.000E+00	---	W1(4)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+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)	5.000E+00	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
=====					

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
R015	Number of unsaturated zone strata	1	NS
R015	Unsat. zone 1, thickness (m)	2.000E+00	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	HCUZ(1)
R016	Distribution coefficients for Th-230		
R016	Contaminated zone (cm**3/g)	3.300E+03	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	DCNUCU(4,1
R016	Saturated zone (cm**3/g)	3.300E+03	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	ALEACH(4)
R016	Solubility constant	0.000E+00	SOLUBK(4)
R016	Distribution coefficients for daughter Pb-210		
R016	Contaminated zone (cm**3/g)	1.000E+02	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	1.000E+02	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	ALEACH(1)
R016	Solubility constant	0.000E+00	SOLUBK(1)
R016	Distribution coefficients for daughter Po-210		
R016	Contaminated zone (cm**3/g)	1.000E+01	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	1.000E+01	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	ALEACH(2)
R016	Solubility constant	0.000E+00	SOLUBK(2)
R016	Distribution coefficients for daughter Ra-226		
R016	Contaminated zone (cm**3/g)	2.530E+02	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	2.530E+02	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	ALEACH(3)
R016	Solubility constant	0.000E+00	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	MLINH
R017	Exposure duration	3.000E+01	ED
R017	Shielding factor, inhalation	4.000E-01	SHF3
R017	Shielding factor, external gamma	4.000E-01	SHF1
R017	Fraction of time spent indoors	6.550E-01	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	FOTD
R017	Shape factor flag, external gamma	1.000E+00	>0 shows circular AREA. FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 10000 SM Th-230

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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	active
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 Harshaw OU2 Model AF 10000 SM Th-230

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 10000.00 square meters	Th-230 1.000E+00
Thickness: 1.50 meters	
Cover Depth: 0.00 meters	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.201E-02	3.416E-02	3.851E-02	5.421E-02	1.017E-01	2.733E-01	6.898E-01	1.448E+00
M(t):	1.280E-03	1.366E-03	1.540E-03	2.169E-03	4.069E-03	1.093E-02	2.759E-02	5.792E-02

Maximum TDOSE(t): 1.448E+00 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.
Th-230	1.175E-03	0.0367	2.408E-03	0.0752	0.000E+00	0.0000	1.372E-02	0.4286	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-02	0.4595
Total	1.175E-03	0.0367	2.408E-03	0.0752	0.000E+00	0.0000	1.372E-02	0.4286	0.000E+00	0.0000	0.000E+00	0.0000	1.471E-02	0.4595

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.
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	3.201E-02	1.0000
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	3.201E-02	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.
Th-230	2.731E-03	0.0800	2.408E-03	0.0705	0.000E+00	0.0000	1.429E-02	0.4185	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.4311
Total	2.731E-03	0.0800	2.408E-03	0.0705	0.000E+00	0.0000	1.429E-02	0.4185	0.000E+00	0.0000	0.000E+00	0.0000	1.472E-02	0.4311

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.
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	3.416E-02	1.0000
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	3.416E-02	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 = 3.000E+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.
Th-230	5.836E-03	0.1516	2.407E-03	0.0625	0.000E+00	0.0000	1.550E-02	0.4026	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-02	0.3834
Total	5.836E-03	0.1516	2.407E-03	0.0625	0.000E+00	0.0000	1.550E-02	0.4026	0.000E+00	0.0000	0.000E+00	0.0000	1.476E-02	0.3834

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	3.851E-02	1.0000
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	3.851E-02	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+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.
Th-230	1.663E-02	0.3068	2.406E-03	0.0444	0.000E+00	0.0000	2.020E-02	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-02	0.2762
Total	1.663E-02	0.3068	2.406E-03	0.0444	0.000E+00	0.0000	2.020E-02	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.497E-02	0.2762

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+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.
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	5.421E-02	1.0000
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	5.421E-02	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 = 3.000E+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.
Th-230	4.688E-02	0.4608	2.403E-03	0.0236	0.000E+00	0.0000	3.646E-02	0.3584	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.1572
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.688E-02	0.4608	2.403E-03	0.0236	0.000E+00	0.0000	3.646E-02	0.3584	0.000E+00	0.0000	0.000E+00	0.0000	1.599E-02	0.1572

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.017E-01	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.017E-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+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.
Th-230	1.460E-01	0.5340	2.395E-03	0.0088	0.000E+00	0.0000	1.037E-01	0.3794	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-02	0.0779
Total	1.460E-01	0.5340	2.395E-03	0.0088	0.000E+00	0.0000	1.037E-01	0.3794	0.000E+00	0.0000	0.000E+00	0.0000	2.128E-02	0.0779

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.
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	2.733E-01	1.0000
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	2.733E-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 = 3.000E+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.
Th-230	3.781E-01	0.5481	2.371E-03	0.0034	0.000E+00	0.0000	2.739E-01	0.3971	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-02	0.0514
Total	3.781E-01	0.5481	2.371E-03	0.0034	0.000E+00	0.0000	2.739E-01	0.3971	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-02	0.0514

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.845E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.898E-01	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.845E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.898E-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.
Th-230	8.002E-01	0.5526	2.265E-03	0.0016	0.000E+00	0.0000	5.845E-01	0.4037	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-02	0.0421
Total	8.002E-01	0.5526	2.265E-03	0.0016	0.000E+00	0.0000	5.845E-01	0.4037	0.000E+00	0.0000	0.000E+00	0.0000	6.100E-02	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.
Th-230	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.448E+00	1.0000
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.414E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.448E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
Th-230	Th-230	1.000E+00	3.095E-02	3.095E-02	3.095E-02	3.093E-02	3.088E-02	3.070E-02	3.020E-02	2.849E-02	
Th-230	Ra-226+D	1.000E+00	1.049E-03	3.179E-03	7.433E-03	2.222E-02	6.365E-02	1.993E-01	5.172E-01	1.095E+00	
Th-230	Pb-210+D	1.000E+00	4.160E-06	2.544E-05	1.235E-04	9.860E-04	6.660E-03	3.995E-02	1.314E-01	2.991E-01	
Th-230	Po-210	1.000E+00	1.398E-07	1.247E-06	7.952E-06	7.586E-05	5.452E-04	3.342E-03	1.105E-02	2.519E-02	
Th-230	äDSR(j)		3.201E-02	3.416E-02	3.851E-02	5.421E-02	1.017E-01	2.733E-01	6.898E-01	1.448E+00	
The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Th-230	7.811E+02	7.319E+02	6.492E+02	4.611E+02	2.457E+02	9.146E+01	3.624E+01	1.727E+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 = 1.000E+03 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
Th-230	1.000E+00	1.000E+03	1.448E+00	1.727E+01	1.448E+00	1.727E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Th-230	Th-230	1.000E+00	3.095E-02	3.095E-02	3.095E-02	3.093E-02	3.088E-02	3.070E-02	3.020E-02	2.849E-02	
Ra-226	Th-230	1.000E+00	1.049E-03	3.179E-03	7.433E-03	2.222E-02	6.365E-02	1.993E-01	5.172E-01	1.095E+00	
Pb-210	Th-230	1.000E+00	4.160E-06	2.544E-05	1.235E-04	9.860E-04	6.660E-03	3.995E-02	1.314E-01	2.991E-01	
Po-210	Th-230	1.000E+00	1.398E-07	1.247E-06	7.952E-06	7.586E-05	5.452E-04	3.342E-03	1.105E-02	2.519E-02	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	
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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Th-230	Th-230	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.918E-01	9.755E-01	9.206E-01	
Ra-226	Th-230	1.000E+00	0.000E+00	4.329E-04	1.297E-03	4.300E-03	1.271E-02	4.027E-02	1.048E-01	2.222E-01	
Pb-210	Th-230	1.000E+00	0.000E+00	6.655E-06	5.853E-05	6.009E-04	4.382E-03	2.697E-02	8.921E-02	2.035E-01	
Po-210	Th-230	1.000E+00	0.000E+00	2.712E-06	4.089E-05	5.355E-04	4.194E-03	2.644E-02	8.792E-02	2.009E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	
THF(i) is the thread fraction of the parent nuclide.											

RESCALC.EXE execution time = 1.06 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

 #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 Harshaw OU2 Model AF 1 SM Th-232

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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)	1.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)

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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table draw rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 1 SM Th-232

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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	active
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 Harshaw OU2 Model AF 1 SM Th-232

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.052E+00	2.051E+00	2.048E+00	2.042E+00	2.035E+00	2.024E+00	1.994E+00	1.894E+00
M(t):	8.209E-02	8.205E-02	8.194E-02	8.167E-02	8.139E-02	8.096E-02	7.977E-02	7.574E-02

Maximum TDOSE(t): 2.052E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	2.451E-01	0.1194	1.610E-04	0.0001	0.000E+00	0.0000	1.343E+00	0.6545	0.000E+00	0.0000	0.000E+00	0.0000	3.978E-05	0.0000
Th-228	2.832E-01	0.1380	8.019E-04	0.0004	0.000E+00	0.0000	1.664E-02	0.0081	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-05	0.0000
Th-232	1.406E-02	0.0069	4.547E-03	0.0022	0.000E+00	0.0000	1.443E-01	0.0703	0.000E+00	0.0000	0.000E+00	0.0000	7.561E-05	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.423E-01	0.2643	5.510E-03	0.0027	0.000E+00	0.0000	1.504E+00	0.7330	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-04	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.588E+00	0.7741
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	3.007E-01	0.1465
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	1.630E-01	0.0794
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.052E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TH-232.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	2.978E-01	0.1452	3.713E-04	0.0002	0.000E+00	0.0000	1.196E+00	0.5829	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-05	0.0000
Th-228	1.971E-01	0.0961	5.582E-04	0.0003	0.000E+00	0.0000	1.158E-02	0.0056	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-05	0.0000
Th-232	4.716E-02	0.0230	4.580E-03	0.0022	0.000E+00	0.0000	2.964E-01	0.1445	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-05	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.420E-01	0.2643	5.509E-03	0.0027	0.000E+00	0.0000	1.504E+00	0.7330	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-04	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.494E+00	0.7282
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	2.093E-01	0.1020
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	3.482E-01	0.1697
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.051E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	3.224E-01	0.1574	5.429E-04	0.0003	0.000E+00	0.0000	9.429E-01	0.4603	0.000E+00	0.0000	0.000E+00	0.0000	3.741E-05	0.0000
Th-228	9.549E-02	0.0466	2.704E-04	0.0001	0.000E+00	0.0000	5.610E-03	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	6.134E-06	0.0000
Th-232	1.235E-01	0.0603	4.694E-03	0.0023	0.000E+00	0.0000	5.530E-01	0.2699	0.000E+00	0.0000	0.000E+00	0.0000	8.990E-05	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.414E-01	0.2643	5.507E-03	0.0027	0.000E+00	0.0000	1.501E+00	0.7330	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.266E+00	0.6180
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	1.014E-01	0.0495
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	6.812E-01	0.3326
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.048E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.877E-01	0.0919	3.735E-04	0.0002	0.000E+00	0.0000	4.057E-01	0.1987	0.000E+00	0.0000	0.000E+00	0.0000	1.919E-05	0.0000
Th-228	7.555E-03	0.0037	2.139E-05	0.0000	0.000E+00	0.0000	4.439E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	4.854E-07	0.0000
Th-232	3.442E-01	0.1686	5.107E-03	0.0025	0.000E+00	0.0000	1.091E+00	0.5341	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.395E-01	0.2642	5.501E-03	0.0027	0.000E+00	0.0000	1.497E+00	0.7330	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-04	0.0001

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	5.938E-01	0.2908
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	8.021E-03	0.0039
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	1.440E+00	0.7052
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.042E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TH-232.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.752E-02	0.0086	3.568E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0176	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-06	0.0000
Th-228	5.378E-06	0.0000	1.523E-08	0.0000	0.000E+00	0.0000	3.159E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.455E-10	0.0000
Th-232	5.199E-01	0.2555	5.455E-03	0.0027	0.000E+00	0.0000	1.456E+00	0.7156	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.374E-01	0.2641	5.491E-03	0.0027	0.000E+00	0.0000	1.492E+00	0.7331	0.000E+00	0.0000	0.000E+00	0.0000	1.329E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	5.332E-02	0.0262
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	5.709E-06	0.0000
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	1.982E+00	0.9738
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.035E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TH-232.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	3.546E-06	0.0000	7.225E-09	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-10	0.0000
Th-228	5.173E-17	0.0000	1.465E-19	0.0000	0.000E+00	0.0000	3.039E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.323E-21	0.0000
Th-232	5.345E-01	0.2641	5.462E-03	0.0027	0.000E+00	0.0000	1.484E+00	0.7331	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.345E-01	0.2641	5.462E-03	0.0027	0.000E+00	0.0000	1.484E+00	0.7331	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-04	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.079E-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	5.491E-17	0.0000
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	2.024E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.024E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TH-232.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	9.901E-17	0.0000	2.017E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.907E-21	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-232	5.267E-01	0.2641	5.382E-03	0.0027	0.000E+00	0.0000	1.462E+00	0.7331	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.267E-01	0.2641	5.382E-03	0.0027	0.000E+00	0.0000	1.462E+00	0.7331	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	3.013E-16	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-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	1.994E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.994E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	5.001E-01	0.2641	5.112E-03	0.0027	0.000E+00	0.0000	1.388E+00	0.7331	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.001E-01	0.2641	5.112E-03	0.0027	0.000E+00	0.0000	1.388E+00	0.7331	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-04	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	1.894E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.894E+00	1.0000

Sum of all water independent and dependent pathways.

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
Ra-228	1.000E+00	0.000E+00	1.588E+00	1.574E+01	1.588E+00	1.574E+01
Th-228	1.000E+00	0.000E+00	3.007E-01	8.315E+01	3.007E-01	8.315E+01
Th-232	1.000E+00	61.1 ± 0.1	2.029E+00	1.232E+01	1.630E-01	1.534E+02
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

Summary : RESRAD Harshaw OU2 Model AF 1 SM Th-232

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.525E+00	1.350E+00	1.059E+00	4.524E-01	3.982E-02	8.058E-06	2.250E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	8.856E-02	2.607E-01	5.497E-01	1.151E+00	1.558E+00	1.590E+00	1.566E+00	1.487E+00		
Ra-228	äDOSE(j)		1.613E+00	1.611E+00	1.609E+00	1.604E+00	1.598E+00	1.590E+00	1.566E+00	1.487E+00		
Th-228	Ra-228	1.000E+00	6.359E-02	1.434E-01	2.068E-01	1.414E-01	1.350E-02	2.734E-06	7.633E-17	0.000E+00		
Th-228	Th-228	1.000E+00	3.007E-01	2.093E-01	1.014E-01	8.021E-03	5.709E-06	5.491E-17	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	2.858E-03	1.585E-02	5.992E-02	2.173E-01	3.517E-01	3.632E-01	3.579E-01	3.398E-01		
Th-228	äDOSE(j)		3.671E-01	3.685E-01	3.681E-01	3.667E-01	3.652E-01	3.632E-01	3.579E-01	3.398E-01		

Th-232 Th-232 1.000E+00 7.160E-02 7.159E-02 7.158E-02 7.155E-02 7.144E-02 7.107E-02 7.003E-02 6.649E-02
 fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01		
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00		
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01		

Th-232 Th-232 1.000E+00 1.000E+00 9.999E-01 9.998E-01 9.993E-01 9.978E-01 9.927E-01 9.781E-01 9.290E-01
 fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff

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

RESMASC.EXE execution time = 1.22 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
Summary of Pathway Selections	7
Contaminated Zone and Total Dose Summary	8
Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

#####

#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 : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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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)	3.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)

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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table draw rate (m/yr)	1.000E-03	1.000E-03	---	VWT

	User	Used by RESRAD	Parameter
Menu	Input	(If different from user input)	Name
XX			
R014	Well pump intake depth (m below water table)	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	---	MODEL
R014	Well pumping rate (m**3/yr)	---	UW
R015	Number of unsaturated zone strata	---	NS
R015	Unsat. zone 1, thickness (m)	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	---	HCUZ(1)
R016	Distribution coefficients for Ra-228		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	---	DCNUCS(1)
R016	Leach rate (/yr)	9.605E-04	ALEACH(1)
R016	Solubility constant	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	---	DCNUCS(2)
R016	Leach rate (/yr)	7.370E-05	ALEACH(2)
R016	Solubility constant	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232		
R016	Contaminated zone (cm**3/g)	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	---	DCNUCS(3)
R016	Leach rate (/yr)	7.370E-05	ALEACH(3)
R016	Solubility constant	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	---	INHALR
R017	Mass loading for inhalation (g/m**3)	---	MLINH
R017	Exposure duration	---	ED
R017	Shielding factor, inhalation	---	SHF3
R017	Shielding factor, external gamma	---	SHF1
R017	Fraction of time spent indoors	---	FIND
R017	Fraction of time spent outdoors (on site)	---	FOTD
R017	Shape factor flag, external gamma	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 3 SM Th-232

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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	active
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 Harshaw OU2 Model AF 3 SM Th-232

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	3.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.725E+00	2.723E+00	2.720E+00	2.711E+00	2.701E+00	2.687E+00	2.648E+00	2.514E+00
M(t):	1.090E-01	1.089E-01	1.088E-01	1.084E-01	1.081E-01	1.075E-01	1.059E-01	1.005E-01

Maximum TDOSE(t): 2.725E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	5.460E-01	0.2004	1.816E-04	0.0001	0.000E+00	0.0000	1.343E+00	0.4930	0.000E+00	0.0000	0.000E+00	0.0000	1.193E-04	0.0000
Th-228	6.366E-01	0.2337	9.043E-04	0.0003	0.000E+00	0.0000	1.664E-02	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	5.458E-05	0.0000
Th-232	3.131E-02	0.0115	5.127E-03	0.0019	0.000E+00	0.0000	1.443E-01	0.0530	0.000E+00	0.0000	0.000E+00	0.0000	2.268E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.214E+00	0.4455	6.213E-03	0.0023	0.000E+00	0.0000	1.504E+00	0.5520	0.000E+00	0.0000	0.000E+00	0.0000	4.007E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.889E+00	0.6935
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	6.542E-01	0.2401
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	1.810E-01	0.0664
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.725E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	6.650E-01	0.2442	4.187E-04	0.0002	0.000E+00	0.0000	1.196E+00	0.4390	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-04	0.0000
Th-228	4.431E-01	0.1627	6.294E-04	0.0002	0.000E+00	0.0000	1.158E-02	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	3.799E-05	0.0000
Th-232	1.051E-01	0.0386	5.164E-03	0.0019	0.000E+00	0.0000	2.964E-01	0.1088	0.000E+00	0.0000	0.000E+00	0.0000	2.414E-04	0.0001
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	1.213E+00	0.4455	6.212E-03	0.0023	0.000E+00	0.0000	1.504E+00	0.5521	0.000E+00	0.0000	0.000E+00	0.0000	4.006E-04	0.0001

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.861E+00	0.6834
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	4.554E-01	0.1672
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	4.069E-01	0.1494
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	2.723E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	7.214E-01	0.2652	6.122E-04	0.0002	0.000E+00	0.0000	9.429E-01	0.3467	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-04	0.0000
Th-228	2.147E-01	0.0789	3.049E-04	0.0001	0.000E+00	0.0000	5.610E-03	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	1.840E-05	0.0000
Th-232	2.758E-01	0.1014	5.293E-03	0.0019	0.000E+00	0.0000	5.530E-01	0.2033	0.000E+00	0.0000	0.000E+00	0.0000	2.697E-04	0.0001
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.212E+00	0.4456	6.210E-03	0.0023	0.000E+00	0.0000	1.501E+00	0.5520	0.000E+00	0.0000	0.000E+00	0.0000	4.003E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.665E+00	0.6122
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	2.206E-01	0.0811
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	8.343E-01	0.3067
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.720E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	4.205E-01	0.1551	4.211E-04	0.0002	0.000E+00	0.0000	4.057E-01	0.1497	0.000E+00	0.0000	0.000E+00	0.0000	5.757E-05	0.0000
Th-228	1.698E-02	0.0063	2.412E-05	0.0000	0.000E+00	0.0000	4.439E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.456E-06	0.0000
Th-232	7.701E-01	0.2841	5.758E-03	0.0021	0.000E+00	0.0000	1.091E+00	0.4023	0.000E+00	0.0000	0.000E+00	0.0000	3.406E-04	0.0001
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	1.208E+00	0.4455	6.204E-03	0.0023	0.000E+00	0.0000	1.497E+00	0.5521	0.000E+00	0.0000	0.000E+00	0.0000	3.996E-04	0.0001

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	8.267E-01	0.3050
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	1.745E-02	0.0064
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	1.867E+00	0.6886
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	2.711E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	3.925E-02	0.0145	4.024E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0132	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-06	0.0000
Th-228	1.209E-05	0.0000	1.717E-08	0.0000	0.000E+00	0.0000	3.159E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E-09	0.0000
Th-232	1.164E+00	0.4308	6.151E-03	0.0023	0.000E+00	0.0000	1.456E+00	0.5390	0.000E+00	0.0000	0.000E+00	0.0000	3.934E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.203E+00	0.4453	6.191E-03	0.0023	0.000E+00	0.0000	1.492E+00	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	3.986E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	7.506E-02	0.0278
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	1.242E-05	0.0000
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	2.626E+00	0.9722
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.701E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	7.945E-06	0.0000	8.147E-09	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.064E-09	0.0000
Th-228	1.163E-16	0.0000	1.652E-19	0.0000	0.000E+00	0.0000	3.039E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.969E-21	0.0000
Th-232	1.196E+00	0.4453	6.159E-03	0.0023	0.000E+00	0.0000	1.484E+00	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.196E+00	0.4453	6.159E-03	0.0023	0.000E+00	0.0000	1.484E+00	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-04	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.519E-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	1.195E-16	0.0000
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	2.687E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.687E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	2.219E-16	0.0000	2.275E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.972E-20	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-232	1.179E+00	0.4453	6.069E-03	0.0023	0.000E+00	0.0000	1.462E+00	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.179E+00	0.4453	6.069E-03	0.0023	0.000E+00	0.0000	1.462E+00	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-04	0.0001

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	4.242E-16	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-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	2.648E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.648E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-232.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	1.119E+00	0.4453	5.764E-03	0.0023	0.000E+00	0.0000	1.388E+00	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	3.711E-04	0.0001
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.119E+00	0.4453	5.764E-03	0.0023	0.000E+00	0.0000	1.388E+00	0.5523	0.000E+00	0.0000	0.000E+00	0.0000	3.711E-04	0.0001

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	2.514E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.514E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-232.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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	1.761E+00	1.559E+00	1.223E+00	5.224E-01	4.598E-02	9.304E-06	2.598E-16	0.000E+00	
Ra-228+D	Th-228+D	1.000E+00	1.288E-01	3.019E-01	4.421E-01	3.043E-01	2.908E-02	5.888E-06	1.644E-16	0.000E+00	
Ra-228+D	äDSR(j)		1.889E+00	1.861E+00	1.665E+00	8.267E-01	7.506E-02	1.519E-05	4.242E-16	0.000E+00	
Th-228+D	Th-228+D	1.000E+00	6.542E-01	4.554E-01	2.206E-01	1.745E-02	1.242E-05	1.195E-16	0.000E+00	0.000E+00	
Th-232	Th-232	1.000E+00	7.235E-02	7.235E-02	7.234E-02	7.230E-02	7.219E-02	7.182E-02	7.077E-02	6.719E-02	
Th-232	Ra-228+D	1.000E+00	1.031E-01	3.020E-01	6.357E-01	1.330E+00	1.800E+00	1.836E+00	1.810E+00	1.718E+00	
Th-232	Th-228+D	1.000E+00	5.582E-03	3.256E-02	1.263E-01	4.643E-01	7.537E-01	7.786E-01	7.672E-01	7.283E-01	
Th-232	äDSR(j)		1.810E-01	4.069E-01	8.343E-01	1.867E+00	2.626E+00	2.687E+00	2.648E+00	2.514E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.323E+01	1.343E+01	1.502E+01	3.024E+01	3.331E+02	1.646E+06	*2.726E+14	*2.726E+14	
Th-228	3.821E+01	5.490E+01	1.133E+02	1.432E+03	2.012E+06	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	1.381E+02	6.144E+01	2.996E+01	1.339E+01	9.519E+00	9.305E+00	9.443E+00	9.945E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	0.000E+00	1.889E+00	1.323E+01	1.889E+00	1.323E+01
Th-228	1.000E+00	0.000E+00	6.542E-01	3.821E+01	6.542E-01	3.821E+01
Th-232	1.000E+00	61.4 ñ 0.1	2.693E+00	9.284E+00	1.810E-01	1.381E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

Summary : RESRAD Harshaw OU2 Model AF 3 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TH-232.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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.761E+00	1.559E+00	1.223E+00	5.224E-01	4.598E-02	9.304E-06	2.598E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	1.031E-01	3.020E-01	6.357E-01	1.330E+00	1.800E+00	1.836E+00	1.810E+00	1.718E+00	
Ra-228	äDOSE(j)		1.864E+00	1.861E+00	1.859E+00	1.853E+00	1.846E+00	1.836E+00	1.810E+00	1.718E+00	
Th-228	Ra-228	1.000E+00	1.288E-01	3.019E-01	4.421E-01	3.043E-01	2.908E-02	5.888E-06	1.644E-16	0.000E+00	
Th-228	Th-228	1.000E+00	6.542E-01	4.554E-01	2.206E-01	1.745E-02	1.242E-05	1.195E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	5.582E-03	3.256E-02	1.263E-01	4.643E-01	7.537E-01	7.786E-01	7.672E-01	7.283E-01	
Th-228	äDOSE(j)		7.886E-01	7.898E-01	7.890E-01	7.861E-01	7.828E-01	7.786E-01	7.672E-01	7.283E-01	

Th-232 Th-232 1.000E+00 7.235E-02 7.235E-02 7.234E-02 7.230E-02 7.219E-02 7.182E-02 7.077E-02 6.719E-02
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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	

Th-232 Th-232 1.000E+00 1.000E+00 9.999E-01 9.998E-01 9.993E-01 9.978E-01 9.927E-01 9.781E-01 9.290E-01
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 1.33 seconds

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

 #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 : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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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)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table draw rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
XXXXXXXXXXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXXXXXXXXXX	
Area:	10.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	1.000E+00

Total Dose TD_{OSE}(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)

[illegible]

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE (t):	4.039E+00	4.037E+00	4.032E+00	4.018E+00	4.003E+00	3.982E+00	3.924E+00	3.725E+00
M(t):	1.615E-01	1.615E-01	1.613E-01	1.607E-01	1.601E-01	1.593E-01	1.569E-01	1.490E-01

Maximum TDOSE(t): 4.039E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.134E+00	0.2808	2.070E-04	0.0001	0.000E+00	0.0000	1.343E+00	0.3326	0.000E+00	0.0000	0.000E+00	0.0000	3.978E-04	0.0001
Th-228	1.327E+00	0.3286	1.031E-03	0.0003	0.000E+00	0.0000	1.664E-02	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-04	0.0000
Th-232	6.500E-02	0.0161	5.844E-03	0.0014	0.000E+00	0.0000	1.443E-01	0.0357	0.000E+00	0.0000	0.000E+00	0.0000	7.561E-04	0.0002
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	2.526E+00	0.6255	7.082E-03	0.0018	0.000E+00	0.0000	1.504E+00	0.3725	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-03	0.0003

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.478E+00	0.6135
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	1.345E+00	0.3330
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	2.159E-01	0.0535
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	4.039E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.383E+00	0.3425	4.772E-04	0.0001	0.000E+00	0.0000	1.196E+00	0.2962	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-04	0.0001
Th-228	9.237E-01	0.2288	7.174E-04	0.0002	0.000E+00	0.0000	1.158E-02	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-04	0.0000
Th-232	2.184E-01	0.0541	5.886E-03	0.0015	0.000E+00	0.0000	2.964E-01	0.0734	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-04	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.525E+00	0.6254	7.081E-03	0.0018	0.000E+00	0.0000	1.504E+00	0.3725	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-03	0.0003

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	2.579E+00	0.6389
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	9.361E-01	0.2319
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	5.215E-01	0.1292
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.037E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.501E+00	0.3723	6.978E-04	0.0002	0.000E+00	0.0000	9.429E-01	0.2339	0.000E+00	0.0000	0.000E+00	0.0000	3.741E-04	0.0001
Th-228	4.475E-01	0.1110	3.475E-04	0.0001	0.000E+00	0.0000	5.610E-03	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	6.134E-05	0.0000
Th-232	5.734E-01	0.1422	6.033E-03	0.0015	0.000E+00	0.0000	5.530E-01	0.1372	0.000E+00	0.0000	0.000E+00	0.0000	8.990E-04	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.522E+00	0.6255	7.079E-03	0.0018	0.000E+00	0.0000	1.501E+00	0.3724	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-03	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	2.445E+00	0.6064
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	4.535E-01	0.1125
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	1.133E+00	0.2811
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.032E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TH-232.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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	8.754E-01	0.2179	4.800E-04	0.0001	0.000E+00	0.0000	4.057E-01	0.1010	0.000E+00	0.0000	0.000E+00	0.0000	1.919E-04	0.0000
Th-228	3.540E-02	0.0088	2.750E-05	0.0000	0.000E+00	0.0000	4.439E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.854E-06	0.0000
Th-232	1.602E+00	0.3987	6.564E-03	0.0016	0.000E+00	0.0000	1.091E+00	0.2714	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-03	0.0003
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	2.513E+00	0.6254	7.071E-03	0.0018	0.000E+00	0.0000	1.497E+00	0.3725	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-03	0.0003

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.282E+00	0.3190
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	3.588E-02	0.0089
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	2.700E+00	0.6721
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	4.018E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TH-232.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	8.170E-02	0.0204	4.586E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0089	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-05	0.0000
Th-228	2.520E-05	0.0000	1.957E-08	0.0000	0.000E+00	0.0000	3.160E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.455E-09	0.0000
Th-232	2.421E+00	0.6048	7.011E-03	0.0018	0.000E+00	0.0000	1.456E+00	0.3637	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-03	0.0003
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.503E+00	0.6253	7.057E-03	0.0018	0.000E+00	0.0000	1.492E+00	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.329E-03	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.175E-01	0.0294
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	2.554E-05	0.0000
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	3.886E+00	0.9706
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.003E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.654E-05	0.0000	9.286E-09	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-09	0.0000
Th-228	2.424E-16	0.0000	1.883E-19	0.0000	0.000E+00	0.0000	3.039E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.323E-20	0.0000
Th-232	2.490E+00	0.6252	7.021E-03	0.0018	0.000E+00	0.0000	1.484E+00	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-03	0.0003
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.490E+00	0.6252	7.021E-03	0.0018	0.000E+00	0.0000	1.484E+00	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-03	0.0003

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	2.379E-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	2.456E-16	0.0000
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	3.982E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.982E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	4.618E-16	0.0000	2.593E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.907E-20	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-232	2.453E+00	0.6252	6.918E-03	0.0018	0.000E+00	0.0000	1.462E+00	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-03	0.0003
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.453E+00	0.6252	6.918E-03	0.0018	0.000E+00	0.0000	1.462E+00	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-03	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	6.643E-16	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-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	3.924E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.924E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	2.329E+00	0.6253	6.570E-03	0.0018	0.000E+00	0.0000	1.388E+00	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-03	0.0003
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.329E+00	0.6253	6.570E-03	0.0018	0.000E+00	0.0000	1.388E+00	0.3727	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-03	0.0003

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	3.725E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.725E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr) / (pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	
Ra-228+D	Ra-228+D	1.000E+00	2.222E+00	1.967E+00	1.543E+00	6.591E-01	5.802E-02	1.174E-05	3.278E-16	0.000E+00	
Ra-228+D	Th-228+D	1.000E+00	2.561E-01	6.116E-01	9.018E-01	6.226E-01	5.952E-02	1.205E-05	3.365E-16	0.000E+00	
Ra-228+D	äDSR (j)		2.478E+00	2.579E+00	2.445E+00	1.282E+00	1.175E-01	2.379E-05	6.643E-16	0.000E+00	
Th-228+D	Th-228+D	1.000E+00	1.345E+00	9.361E-01	4.535E-01	3.588E-02	2.554E-05	2.456E-16	0.000E+00	0.000E+00	
Th-232	Th-232	1.000E+00	7.363E-02	7.363E-02	7.362E-02	7.358E-02	7.347E-02	7.309E-02	7.202E-02	6.838E-02	
Th-232	Ra-228+D	1.000E+00	1.314E-01	3.827E-01	8.037E-01	1.680E+00	2.273E+00	2.319E+00	2.285E+00	2.170E+00	
Th-232	Th-228+D	1.000E+00	1.090E-02	6.521E-02	2.560E-01	9.468E-01	1.539E+00	1.590E+00	1.567E+00	1.487E+00	
Th-232	äDSR (j)		2.159E-01	5.215E-01	1.133E+00	2.700E+00	3.886E+00	3.982E+00	3.924E+00	3.725E+00	
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	

The DSR includes contributions from associated (half-life ó 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.009E+01	9.694E+00	1.023E+01	1.950E+01	2.127E+02	1.051E+06	*2.726E+14	*2.726E+14	
Th-228	1.859E+01	2.671E+01	5.513E+01	6.967E+02	9.789E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	1.158E+02	4.794E+01	2.206E+01	9.258E+00	6.434E+00	6.279E+00	6.372E+00	6.711E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	1.216 ñ 0.002	2.582E+00	9.683E+00	2.478E+00	1.009E+01
Th-228	1.000E+00	0.000E+00	1.345E+00	1.859E+01	1.345E+00	1.859E+01
Th-232	1.000E+00	62.0 ñ 0.1	3.991E+00	6.265E+00	2.159E-01	1.158E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	2.222E+00	1.967E+00	1.543E+00	6.591E-01	5.802E-02	1.174E-05	3.278E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	1.314E-01	3.827E-01	8.037E-01	1.680E+00	2.273E+00	2.319E+00	2.285E+00	2.170E+00		
Ra-228	äDOSE(j)		2.353E+00	2.350E+00	2.347E+00	2.339E+00	2.331E+00	2.319E+00	2.285E+00	2.170E+00		
Th-228	Ra-228	1.000E+00	2.561E-01	6.116E-01	9.018E-01	6.226E-01	5.952E-02	1.205E-05	3.365E-16	0.000E+00		
Th-228	Th-228	1.000E+00	1.345E+00	9.361E-01	4.535E-01	3.588E-02	2.554E-05	2.456E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	1.090E-02	6.521E-02	2.560E-01	9.468E-01	1.539E+00	1.590E+00	1.567E+00	1.487E+00		
Th-228	äDOSE(j)		1.612E+00	1.613E+00	1.611E+00	1.605E+00	1.599E+00	1.590E+00	1.567E+00	1.487E+00		
Th-232	Th-232	1.000E+00	7.363E-02	7.363E-02	7.362E-02	7.358E-02	7.347E-02	7.309E-02	7.202E-02	6.838E-02		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01		
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00		
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01		
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.13 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
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Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

#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 : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table draw rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	30.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.035E+00	5.032E+00	5.026E+00	5.009E+00	4.990E+00	4.964E+00	4.891E+00	4.644E+00
M(t):	2.014E-01	2.013E-01	2.010E-01	2.004E-01	1.996E-01	1.985E-01	1.956E-01	1.858E-01

Maximum TDOSE(t): 5.035E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.574E+00	0.3126	2.331E-04	0.0000	0.000E+00	0.0000	1.343E+00	0.2668	0.000E+00	0.0000	0.000E+00	0.0000	1.193E-03	0.0002
Th-228	1.855E+00	0.3684	1.161E-03	0.0002	0.000E+00	0.0000	1.664E-02	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	5.458E-04	0.0001
Th-232	9.017E-02	0.0179	6.580E-03	0.0013	0.000E+00	0.0000	1.443E-01	0.0287	0.000E+00	0.0000	0.000E+00	0.0000	2.268E-03	0.0005
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.519E+00	0.6989	7.974E-03	0.0016	0.000E+00	0.0000	1.504E+00	0.2988	0.000E+00	0.0000	0.000E+00	0.0000	4.007E-03	0.0008

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	2.918E+00	0.5796
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	1.873E+00	0.3720
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	2.434E-01	0.0483
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.035E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-228	1.923E+00	0.3820	5.373E-04	0.0001	0.000E+00	0.0000	1.196E+00	0.2376	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-03	0.0002
Th-228	1.291E+00	0.2565	8.078E-04	0.0002	0.000E+00	0.0000	1.158E-02	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	3.799E-04	0.0001
Th-232	3.034E-01	0.0603	6.628E-03	0.0013	0.000E+00	0.0000	2.964E-01	0.0589	0.000E+00	0.0000	0.000E+00	0.0000	2.414E-03	0.0005
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.517E+00	0.6988	7.973E-03	0.0016	0.000E+00	0.0000	1.504E+00	0.2988	0.000E+00	0.0000	0.000E+00	0.0000	4.006E-03	0.0008

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-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	3.120E+00	0.6200
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	1.304E+00	0.2591
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	6.088E-01	0.1210
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.032E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	2.090E+00	0.4158	7.857E-04	0.0002	0.000E+00	0.0000	9.429E-01	0.1876	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-03	0.0002
Th-228	6.254E-01	0.1244	3.913E-04	0.0001	0.000E+00	0.0000	5.611E-03	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	1.840E-04	0.0000
Th-232	7.974E-01	0.1586	6.794E-03	0.0014	0.000E+00	0.0000	5.530E-01	0.1100	0.000E+00	0.0000	0.000E+00	0.0000	2.697E-03	0.0005
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.513E+00	0.6989	7.971E-03	0.0016	0.000E+00	0.0000	1.501E+00	0.2987	0.000E+00	0.0000	0.000E+00	0.0000	4.003E-03	0.0008

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	3.035E+00	0.6038
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	6.316E-01	0.1257
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	1.360E+00	0.2705
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.026E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
Ra-228	1.220E+00	0.2436	5.405E-04	0.0001	0.000E+00	0.0000	4.057E-01	0.0810	0.000E+00	0.0000	0.000E+00	0.0000	5.757E-04	0.0001
Th-228	4.948E-02	0.0099	3.096E-05	0.0000	0.000E+00	0.0000	4.440E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.456E-05	0.0000
Th-232	2.231E+00	0.4453	7.391E-03	0.0015	0.000E+00	0.0000	1.091E+00	0.2177	0.000E+00	0.0000	0.000E+00	0.0000	3.406E-03	0.0007
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.500E+00	0.6988	7.962E-03	0.0016	0.000E+00	0.0000	1.497E+00	0.2988	0.000E+00	0.0000	0.000E+00	0.0000	3.996E-03	0.0008

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
Ra-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	1.627E+00	0.3248
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	4.997E-02	0.0100
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	3.332E+00	0.6652
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.009E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM TH-232.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.139E-01	0.0228	5.164E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0072	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-05	0.0000
Th-228	3.522E-05	0.0000	2.204E-08	0.0000	0.000E+00	0.0000	3.160E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E-08	0.0000
Th-232	3.373E+00	0.6758	7.895E-03	0.0016	0.000E+00	0.0000	1.456E+00	0.2918	0.000E+00	0.0000	0.000E+00	0.0000	3.934E-03	0.0008
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.487E+00	0.6987	7.947E-03	0.0016	0.000E+00	0.0000	1.492E+00	0.2989	0.000E+00	0.0000	0.000E+00	0.0000	3.986E-03	0.0008

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.498E-01	0.0300
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	3.557E-05	0.0000
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	4.841E+00	0.9700
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.990E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	2.306E-05	0.0000	1.046E-08	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.064E-08	0.0000
Th-228	3.388E-16	0.0000	2.120E-19	0.0000	0.000E+00	0.0000	3.039E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.969E-20	0.0000
Th-232	3.468E+00	0.6987	7.905E-03	0.0016	0.000E+00	0.0000	1.484E+00	0.2989	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-03	0.0008
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.468E+00	0.6987	7.905E-03	0.0016	0.000E+00	0.0000	1.484E+00	0.2989	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-03	0.0008

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	3.032E-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	3.421E-16	0.0000
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	4.964E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.964E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	6.438E-16	0.0000	2.920E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.972E-19	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-232	3.417E+00	0.6987	7.790E-03	0.0016	0.000E+00	0.0000	1.462E+00	0.2989	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-03	0.0008
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.417E+00	0.6987	7.790E-03	0.0016	0.000E+00	0.0000	1.462E+00	0.2989	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-03	0.0008

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	8.465E-16	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-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	4.891E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.891E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	3.245E+00	0.6987	7.398E-03	0.0016	0.000E+00	0.0000	1.388E+00	0.2989	0.000E+00	0.0000	0.000E+00	0.0000	3.711E-03	0.0008
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.245E+00	0.6987	7.398E-03	0.0016	0.000E+00	0.0000	1.388E+00	0.2989	0.000E+00	0.0000	0.000E+00	0.0000	3.711E-03	0.0008

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	4.644E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.644E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	2.565E+00	2.271E+00	1.781E+00	7.610E-01	6.698E-02	1.355E-05	3.785E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	3.534E-01	8.484E-01	1.253E+00	8.660E-01	8.279E-02	1.676E-05	4.681E-16	0.000E+00
Ra-228+D	äDSR(j)		2.918E+00	3.120E+00	3.035E+00	1.627E+00	1.498E-01	3.032E-05	8.465E-16	0.000E+00
Th-228+D	Th-228+D	1.000E+00	1.873E+00	1.304E+00	6.316E-01	4.997E-02	3.557E-05	3.421E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	7.587E-02	7.586E-02	7.585E-02	7.581E-02	7.570E-02	7.531E-02	7.421E-02	7.046E-02
Th-232	Ra-228+D	1.000E+00	1.525E-01	4.428E-01	9.288E-01	1.940E+00	2.625E+00	2.678E+00	2.639E+00	2.506E+00
Th-232	Th-228+D	1.000E+00	1.497E-02	9.017E-02	3.551E-01	1.316E+00	2.140E+00	2.210E+00	2.178E+00	2.068E+00
Th-232	äDSR(j)		2.434E-01	6.088E-01	1.360E+00	3.332E+00	4.841E+00	4.964E+00	4.891E+00	4.644E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii
The DSR includes contributions from associated (half-life ó 30 days) daughters.										

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	8.566E+00	8.013E+00	8.238E+00	1.537E+01	1.669E+02	8.246E+05	*2.726E+14	*2.726E+14	
Th-228	1.335E+01	1.918E+01	3.958E+01	5.003E+02	7.029E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	1.027E+02	4.107E+01	1.838E+01	7.503E+00	5.165E+00	5.037E+00	5.111E+00	5.383E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	1.584 ñ 0.003	3.146E+00	7.947E+00	2.918E+00	8.566E+00
Th-228	1.000E+00	0.000E+00	1.873E+00	1.335E+01	1.873E+00	1.335E+01
Th-232	1.000E+00	62.1 ñ 0.1	4.975E+00	5.026E+00	2.434E-01	1.027E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Ra-228	Ra-228	1.000E+00	2.565E+00	2.271E+00	1.781E+00	7.610E-01	6.698E-02	1.355E-05	3.785E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	1.525E-01	4.428E-01	9.288E-01	1.940E+00	2.625E+00	2.678E+00	2.639E+00	2.506E+00	
Ra-228	äDOSE (j)		2.717E+00	2.714E+00	2.710E+00	2.701E+00	2.692E+00	2.678E+00	2.639E+00	2.506E+00	
Th-228	Ra-228	1.000E+00	3.534E-01	8.484E-01	1.253E+00	8.660E-01	8.279E-02	1.676E-05	4.681E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.873E+00	1.304E+00	6.316E-01	4.997E-02	3.557E-05	3.421E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	1.497E-02	9.017E-02	3.551E-01	1.316E+00	2.140E+00	2.210E+00	2.178E+00	2.068E+00	
Th-228	äDOSE (j)		2.242E+00	2.242E+00	2.240E+00	2.232E+00	2.222E+00	2.210E+00	2.178E+00	2.068E+00	
Th-232	Th-232	1.000E+00	7.587E-02	7.586E-02	7.585E-02	7.581E-02	7.570E-02	7.531E-02	7.421E-02	7.046E-02	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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

RESCALC.EXE execution time = 1.16 seconds

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Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
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Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

#####

#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 : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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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)	1.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table draw rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 100 SM Th-232

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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	active
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 Harshaw OU2 Model AF 100 SM Th-232

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	100.00 square meters	Ra-228	1.000E+00
Thickness:	1.50 meters	Th-228	1.000E+00
Cover Depth:	0.00 meters	Th-232	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)

AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.887E+00	5.884E+00	5.877E+00	5.857E+00	5.835E+00	5.804E+00	5.719E+00	5.430E+00
M(t):	2.355E-01	2.354E-01	2.351E-01	2.343E-01	2.334E-01	2.322E-01	2.288E-01	2.172E-01

Maximum TDOSE(t): 5.887E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.946E+00	0.3305	2.652E-04	0.0000	0.000E+00	0.0000	1.343E+00	0.2282	0.000E+00	0.0000	0.000E+00	0.0000	3.978E-03	0.0007
Th-228	2.303E+00	0.3912	1.321E-03	0.0002	0.000E+00	0.0000	1.664E-02	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-03	0.0003
Th-232	1.115E-01	0.0189	7.487E-03	0.0013	0.000E+00	0.0000	1.443E-01	0.0245	0.000E+00	0.0000	0.000E+00	0.0000	7.561E-03	0.0013
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	4.361E+00	0.7407	9.073E-03	0.0015	0.000E+00	0.0000	1.504E+00	0.2555	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-02	0.0023

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	3.293E+00	0.5594
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	2.323E+00	0.3946
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	2.708E-01	0.0460
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.887E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 100 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.380E+00	0.4045	6.114E-04	0.0001	0.000E+00	0.0000	1.196E+00	0.2032	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-03	0.0007
Th-228	1.603E+00	0.2724	9.192E-04	0.0002	0.000E+00	0.0000	1.158E-02	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-03	0.0002
Th-232	3.753E-01	0.0638	7.542E-03	0.0013	0.000E+00	0.0000	2.964E-01	0.0504	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-03	0.0014
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.358E+00	0.7407	9.072E-03	0.0015	0.000E+00	0.0000	1.504E+00	0.2555	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-02	0.0023

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.580E+00	0.6084
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	1.617E+00	0.2748
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	6.872E-01	0.1168
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	5.884E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-228	2.590E+00	0.4406	8.940E-04	0.0002	0.000E+00	0.0000	9.429E-01	0.1604	0.000E+00	0.0000	0.000E+00	0.0000	3.741E-03	0.0006
Th-228	7.766E-01	0.1321	4.453E-04	0.0001	0.000E+00	0.0000	5.611E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	6.134E-04	0.0001
Th-232	9.871E-01	0.1680	7.730E-03	0.0013	0.000E+00	0.0000	5.530E-01	0.0941	0.000E+00	0.0000	0.000E+00	0.0000	8.990E-03	0.0015
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	4.353E+00	0.7407	9.069E-03	0.0015	0.000E+00	0.0000	1.501E+00	0.2555	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-02	0.0023

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-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	3.537E+00	0.6018
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	7.832E-01	0.1333
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	1.557E+00	0.2649
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	5.877E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.513E+00	0.2583	6.150E-04	0.0001	0.000E+00	0.0000	4.057E-01	0.0693	0.000E+00	0.0000	0.000E+00	0.0000	1.919E-03	0.0003
Th-228	6.145E-02	0.0105	3.523E-05	0.0000	0.000E+00	0.0000	4.440E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.854E-05	0.0000
Th-232	2.764E+00	0.4719	8.410E-03	0.0014	0.000E+00	0.0000	1.091E+00	0.1862	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-02	0.0019
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	4.338E+00	0.7406	9.060E-03	0.0015	0.000E+00	0.0000	1.497E+00	0.2555	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-02	0.0023

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.921E+00	0.3280
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	6.197E-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	3.874E+00	0.6614
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	5.857E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.412E-01	0.0242	5.876E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-04	0.0000
Th-228	4.373E-05	0.0000	2.508E-08	0.0000	0.000E+00	0.0000	3.160E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.455E-08	0.0000
Th-232	4.180E+00	0.7163	8.983E-03	0.0015	0.000E+00	0.0000	1.456E+00	0.2495	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-02	0.0022
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	4.321E+00	0.7405	9.042E-03	0.0015	0.000E+00	0.0000	1.492E+00	0.2557	0.000E+00	0.0000	0.000E+00	0.0000	1.329E-02	0.0023

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.772E-01	0.0304
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	4.411E-05	0.0000
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	5.658E+00	0.9696
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.835E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 100 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.859E-05	0.0000	1.190E-08	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-08	0.0000
Th-228	4.207E-16	0.0000	2.412E-19	0.0000	0.000E+00	0.0000	3.040E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.323E-19	0.0000
Th-232	4.298E+00	0.7405	8.995E-03	0.0015	0.000E+00	0.0000	1.484E+00	0.2557	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-02	0.0023
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.298E+00	0.7405	8.995E-03	0.0015	0.000E+00	0.0000	1.484E+00	0.2557	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-02	0.0023

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.587E-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	4.243E-16	0.0000
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	5.804E+00	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	5.804E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 100 SM TH-232.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	7.983E-16	0.0000	3.322E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.907E-19	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-232	4.235E+00	0.7405	8.864E-03	0.0015	0.000E+00	0.0000	1.462E+00	0.2557	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-02	0.0023
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.235E+00	0.7405	8.864E-03	0.0015	0.000E+00	0.0000	1.462E+00	0.2557	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-02	0.0023

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.002E-15	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-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	5.719E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.719E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	4.021E+00	0.7405	8.418E-03	0.0016	0.000E+00	0.0000	1.388E+00	0.2557	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-02	0.0023
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.021E+00	0.7405	8.418E-03	0.0016	0.000E+00	0.0000	1.388E+00	0.2557	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-02	0.0023

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	5.430E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.430E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	2.857E+00	2.530E+00	1.984E+00	8.477E-01	7.461E-02	1.510E-05	4.216E-16	0.000E+00	
Ra-228+D	Th-228+D	1.000E+00	4.363E-01	1.050E+00	1.553E+00	1.073E+00	1.026E-01	2.078E-05	5.802E-16	0.000E+00	
Ra-228+D	äDSR(j)		3.293E+00	3.580E+00	3.537E+00	1.921E+00	1.772E-01	3.587E-05	1.002E-15	0.000E+00	
Th-228+D	Th-228+D	1.000E+00	2.323E+00	1.617E+00	7.832E-01	6.197E-02	4.411E-05	4.243E-16	0.000E+00	0.000E+00	
Th-232	Th-232	1.000E+00	8.193E-02	8.192E-02	8.191E-02	8.187E-02	8.175E-02	8.133E-02	8.014E-02	7.609E-02	
Th-232	Ra-228+D	1.000E+00	1.705E-01	4.939E-01	1.035E+00	2.162E+00	2.925E+00	2.984E+00	2.940E+00	2.792E+00	
Th-232	Th-228+D	1.000E+00	1.844E-02	1.114E-01	4.396E-01	1.630E+00	2.651E+00	2.739E+00	2.699E+00	2.562E+00	
Th-232	äDSR(j)		2.708E-01	6.872E-01	1.557E+00	3.874E+00	5.658E+00	5.804E+00	5.719E+00	5.430E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	7.591E+00	6.983E+00	7.068E+00	1.301E+01	1.411E+02	6.969E+05	*2.726E+14	*2.726E+14	
Th-228	1.076E+01	1.546E+01	3.192E+01	4.034E+02	5.668E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	9.230E+01	3.638E+01	1.606E+01	6.453E+00	4.419E+00	4.307E+00	4.371E+00	4.604E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	1.777 ñ 0.004	3.635E+00	6.877E+00	3.293E+00	7.591E+00
Th-228	1.000E+00	0.000E+00	2.323E+00	1.076E+01	2.323E+00	1.076E+01
Th-232	1.000E+00	62.1 ñ 0.1	5.817E+00	4.298E+00	2.708E-01	9.230E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

Summary : RESRAD Harshaw OU2 Model AF 100 SM Th-232

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	2.857E+00	2.530E+00	1.984E+00	8.477E-01	7.461E-02	1.510E-05	4.216E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	1.705E-01	4.939E-01	1.035E+00	2.162E+00	2.925E+00	2.984E+00	2.940E+00	2.792E+00		
Ra-228	äDOSE(j)		3.028E+00	3.024E+00	3.020E+00	3.010E+00	3.000E+00	2.984E+00	2.940E+00	2.792E+00		
Th-228	Ra-228	1.000E+00	4.363E-01	1.050E+00	1.553E+00	1.073E+00	1.026E-01	2.078E-05	5.802E-16	0.000E+00		
Th-228	Th-228	1.000E+00	2.323E+00	1.617E+00	7.832E-01	6.197E-02	4.411E-05	4.243E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	1.844E-02	1.114E-01	4.396E-01	1.630E+00	2.651E+00	2.739E+00	2.699E+00	2.562E+00		
Th-228	äDOSE(j)		2.778E+00	2.778E+00	2.776E+00	2.765E+00	2.754E+00	2.739E+00	2.699E+00	2.562E+00		

Th-232 Th-232 1.000E+00 8.193E-02 8.192E-02 8.191E-02 8.187E-02 8.175E-02 8.133E-02 8.014E-02 7.609E-02
 fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01		
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00		
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01		

Th-232 Th-232 1.000E+00 1.000E+00 9.999E-01 9.998E-01 9.993E-01 9.978E-01 9.927E-01 9.781E-01 9.290E-01
 fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff fffffff

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

RESRAD.EXE execution time = 1.11 seconds

ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ

Dose Conversion Factor (and Related) Parameter Summary ...	2
Site-Specific Parameter Summary	3
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Total Dose Components	
Time = 0.000E+00	9
Time = 1.000E+00	10
Time = 3.000E+00	11
Time = 1.000E+01	12
Time = 3.000E+01	13
Time = 1.000E+02	14
Time = 3.000E+02	15
Time = 1.000E+03	16
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Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

#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 Harshaw OU2 Model AF 300 SM Th-232

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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)	3.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)

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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table draw rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 300 SM Th-232

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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	active
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 Harshaw OU2 Model AF 300 SM Th-232

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 300.00 square meters	Ra-228 1.000E+00
Thickness: 1.50 meters	Th-228 1.000E+00
Cover Depth: 0.00 meters	Th-232 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.275E+00	6.272E+00	6.264E+00	6.243E+00	6.220E+00	6.186E+00	6.096E+00	5.788E+00
M(t):	2.510E-01	2.509E-01	2.506E-01	2.497E-01	2.488E-01	2.475E-01	2.438E-01	2.315E-01

Maximum TDOSE(t): 6.275E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 300 SM TH-232.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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.103E+00	0.3352	2.981E-04	0.0000	0.000E+00	0.0000	1.343E+00	0.2141	0.000E+00	0.0000	0.000E+00	0.0000	1.193E-02	0.0019
Th-228	2.497E+00	0.3979	1.484E-03	0.0002	0.000E+00	0.0000	1.664E-02	0.0027	0.000E+00	0.0000	0.000E+00	0.0000	5.458E-03	0.0009
Th-232	1.204E-01	0.0192	8.416E-03	0.0013	0.000E+00	0.0000	1.444E-01	0.0230	0.000E+00	0.0000	0.000E+00	0.0000	2.268E-02	0.0036
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.721E+00	0.7523	1.020E-02	0.0016	0.000E+00	0.0000	1.504E+00	0.2397	0.000E+00	0.0000	0.000E+00	0.0000	4.007E-02	0.0064

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.459E+00	0.5512
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	2.521E+00	0.4017
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	2.959E-01	0.0472
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.275E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-228	2.575E+00	0.4105	6.872E-04	0.0001	0.000E+00	0.0000	1.196E+00	0.1906	0.000E+00	0.0000	0.000E+00	0.0000	1.212E-02	0.0019
Th-228	1.738E+00	0.2771	1.033E-03	0.0002	0.000E+00	0.0000	1.158E-02	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	3.799E-03	0.0006
Th-232	4.057E-01	0.0647	8.477E-03	0.0014	0.000E+00	0.0000	2.964E-01	0.0473	0.000E+00	0.0000	0.000E+00	0.0000	2.414E-02	0.0038
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
Total	4.718E+00	0.7523	1.020E-02	0.0016	0.000E+00	0.0000	1.504E+00	0.2397	0.000E+00	0.0000	0.000E+00	0.0000	4.006E-02	0.0064

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-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	3.783E+00	0.6032
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	1.754E+00	0.2797
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	7.347E-01	0.1171
iiiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii	iiiiiii	iiiiii
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	6.272E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	2.803E+00	0.4474	1.005E-03	0.0002	0.000E+00	0.0000	9.429E-01	0.1505	0.000E+00	0.0000	0.000E+00	0.0000	1.122E-02	0.0018
Th-228	8.419E-01	0.1344	5.005E-04	0.0001	0.000E+00	0.0000	5.612E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	1.840E-03	0.0003
Th-232	1.068E+00	0.1705	8.689E-03	0.0014	0.000E+00	0.0000	5.530E-01	0.0883	0.000E+00	0.0000	0.000E+00	0.0000	2.697E-02	0.0043
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	4.713E+00	0.7523	1.019E-02	0.0016	0.000E+00	0.0000	1.501E+00	0.2397	0.000E+00	0.0000	0.000E+00	0.0000	4.003E-02	0.0064

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	3.758E+00	0.5999
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	8.498E-01	0.1357
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	1.656E+00	0.2644
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	6.264E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.638E+00	0.2624	6.913E-04	0.0001	0.000E+00	0.0000	4.057E-01	0.0650	0.000E+00	0.0000	0.000E+00	0.0000	5.757E-03	0.0009
Th-228	6.661E-02	0.0107	3.960E-05	0.0000	0.000E+00	0.0000	4.440E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.456E-04	0.0000
Th-232	2.991E+00	0.4792	9.452E-03	0.0015	0.000E+00	0.0000	1.091E+00	0.1747	0.000E+00	0.0000	0.000E+00	0.0000	3.406E-02	0.0055
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	4.696E+00	0.7522	1.018E-02	0.0016	0.000E+00	0.0000	1.497E+00	0.2397	0.000E+00	0.0000	0.000E+00	0.0000	3.996E-02	0.0064

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.050E+00	0.3284
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	6.724E-02	0.0108
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	4.125E+00	0.6608
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	6.243E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.529E-01	0.0246	6.605E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0058	0.000E+00	0.0000	0.000E+00	0.0000	5.259E-04	0.0001
Th-228	4.741E-05	0.0000	2.819E-08	0.0000	0.000E+00	0.0000	3.160E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.036E-07	0.0000
Th-232	4.525E+00	0.7275	1.010E-02	0.0016	0.000E+00	0.0000	1.456E+00	0.2341	0.000E+00	0.0000	0.000E+00	0.0000	3.934E-02	0.0063
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.678E+00	0.7521	1.016E-02	0.0016	0.000E+00	0.0000	1.492E+00	0.2399	0.000E+00	0.0000	0.000E+00	0.0000	3.986E-02	0.0064

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.893E-01	0.0304
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	4.786E-05	0.0000
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	6.030E+00	0.9696
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.220E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	3.096E-05	0.0000	1.337E-08	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.064E-07	0.0000
Th-228	4.561E-16	0.0000	2.711E-19	0.0000	0.000E+00	0.0000	3.040E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.969E-19	0.0000
Th-232	4.653E+00	0.7521	1.011E-02	0.0016	0.000E+00	0.0000	1.484E+00	0.2399	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-02	0.0064
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	4.653E+00	0.7521	1.011E-02	0.0016	0.000E+00	0.0000	1.484E+00	0.2399	0.000E+00	0.0000	0.000E+00	0.0000	3.965E-02	0.0064

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.832E-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	4.604E-16	0.0000
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	6.186E+00	1.0000
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	6.186E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	8.645E-16	0.0000	3.734E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.972E-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	0.000E+00	0.0000
Th-232	4.585E+00	0.7521	9.963E-03	0.0016	0.000E+00	0.0000	1.462E+00	0.2399	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-02	0.0064
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.585E+00	0.7521	9.963E-03	0.0016	0.000E+00	0.0000	1.462E+00	0.2399	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-02	0.0064

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.070E-15	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-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	6.096E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.096E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	4.353E+00	0.7521	9.462E-03	0.0016	0.000E+00	0.0000	1.388E+00	0.2399	0.000E+00	0.0000	0.000E+00	0.0000	3.711E-02	0.0064
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.353E+00	0.7521	9.462E-03	0.0016	0.000E+00	0.0000	1.388E+00	0.2399	0.000E+00	0.0000	0.000E+00	0.0000	3.711E-02	0.0064

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	5.788E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.788E+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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	2.986E+00	2.644E+00	2.074E+00	8.859E-01	7.798E-02	1.578E-05	4.406E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	4.727E-01	1.139E+00	1.684E+00	1.164E+00	1.113E-01	2.254E-05	6.294E-16	0.000E+00
Ra-228+D	äDSR(j)		3.459E+00	3.783E+00	3.758E+00	2.050E+00	1.893E-01	3.832E-05	1.070E-15	0.000E+00
Th-228+D	Th-228+D	1.000E+00	2.521E+00	1.754E+00	8.498E-01	6.724E-02	4.786E-05	4.604E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	9.752E-02	9.751E-02	9.750E-02	9.745E-02	9.730E-02	9.680E-02	9.538E-02	9.057E-02
Th-232	Ra-228+D	1.000E+00	1.784E-01	5.164E-01	1.082E+00	2.260E+00	3.057E+00	3.119E+00	3.073E+00	2.918E+00
Th-232	Th-228+D	1.000E+00	1.996E-02	1.208E-01	4.767E-01	1.768E+00	2.876E+00	2.971E+00	2.927E+00	2.779E+00
Th-232	äDSR(j)		2.959E-01	7.347E-01	1.656E+00	4.125E+00	6.030E+00	6.186E+00	6.096E+00	5.788E+00
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life ó 30 days) daughters.

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 2.500E+01 mrem/yr

Nuclide	t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	7.228E+00	6.608E+00	6.652E+00	1.219E+01	1.321E+02	6.524E+05	*2.726E+14	*2.726E+14	
Th-228	9.919E+00	1.425E+01	2.942E+01	3.718E+02	5.224E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	8.449E+01	3.403E+01	1.509E+01	6.060E+00	4.146E+00	4.041E+00	4.101E+00	4.319E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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 = 0.000E+00 years

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	1.844 ñ 0.004	3.852E+00	6.489E+00	3.459E+00	7.228E+00
Th-228	1.000E+00	0.000E+00	2.521E+00	9.919E+00	2.521E+00	9.919E+00
Th-232	1.000E+00	62.1 ñ 0.1	6.200E+00	4.032E+00	2.959E-01	8.449E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	2.986E+00	2.644E+00	2.074E+00	8.859E-01	7.798E-02	1.578E-05	4.406E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	1.784E-01	5.164E-01	1.082E+00	2.260E+00	3.057E+00	3.119E+00	3.073E+00	2.918E+00		
Ra-228	äDOSE(j)		3.164E+00	3.161E+00	3.156E+00	3.146E+00	3.135E+00	3.119E+00	3.073E+00	2.918E+00		
Th-228	Ra-228	1.000E+00	4.727E-01	1.139E+00	1.684E+00	1.164E+00	1.113E-01	2.254E-05	6.294E-16	0.000E+00		
Th-228	Th-228	1.000E+00	2.521E+00	1.754E+00	8.498E-01	6.724E-02	4.786E-05	4.604E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	1.996E-02	1.208E-01	4.767E-01	1.768E+00	2.876E+00	2.971E+00	2.927E+00	2.779E+00		
Th-228	äDOSE(j)		3.013E+00	3.014E+00	3.011E+00	3.000E+00	2.987E+00	2.971E+00	2.927E+00	2.779E+00		
Th-232	Th-232	1.000E+00	9.752E-02	9.751E-02	9.750E-02	9.745E-02	9.730E-02	9.680E-02	9.538E-02	9.057E-02		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii		

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00		
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01		
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00		
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00		
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01		
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01		
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01		
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii		

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

RESCALC.EXE execution time = 1.13 seconds

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

 #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 Harshaw OU2 Model AF 1000 SM Th-232

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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)	1.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (3)
R016	Unsat. zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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 Harshaw OU2 Model AF 1000 SM Th-232

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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	active
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 Harshaw OU2 Model AF 1000 SM Th-232

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 1000.00 square meters	Ra-228 1.000E+00
Thickness: 1.50 meters	Th-228 1.000E+00
Cover Depth: 0.00 meters	Th-232 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.613E+00	6.610E+00	6.602E+00	6.579E+00	6.555E+00	6.520E+00	6.424E+00	6.100E+00
M(t):	2.645E-01	2.644E-01	2.641E-01	2.632E-01	2.622E-01	2.608E-01	2.570E-01	2.440E-01

Maximum TDOSE(t): 6.613E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.209E+00	0.3340	3.384E-04	0.0001	0.000E+00	0.0000	1.343E+00	0.2031	0.000E+00	0.0000	0.000E+00	0.0000	3.978E-02	0.0060
Th-228	2.629E+00	0.3975	1.685E-03	0.0003	0.000E+00	0.0000	1.665E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-02	0.0028
Th-232	1.265E-01	0.0191	9.555E-03	0.0014	0.000E+00	0.0000	1.444E-01	0.0218	0.000E+00	0.0000	0.000E+00	0.0000	7.561E-02	0.0114
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	4.964E+00	0.7506	1.158E-02	0.0018	0.000E+00	0.0000	1.504E+00	0.2275	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-01	0.0202

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.592E+00	0.5432
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	2.665E+00	0.4030
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	3.560E-01	0.0538
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	6.613E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-228	2.706E+00	0.4093	7.802E-04	0.0001	0.000E+00	0.0000	1.196E+00	0.1809	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-02	0.0061
Th-228	1.829E+00	0.2768	1.173E-03	0.0002	0.000E+00	0.0000	1.159E-02	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-02	0.0019
Th-232	4.262E-01	0.0645	9.624E-03	0.0015	0.000E+00	0.0000	2.964E-01	0.0448	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-02	0.0122
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.961E+00	0.7506	1.158E-02	0.0018	0.000E+00	0.0000	1.504E+00	0.2275	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-01	0.0202

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-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	3.942E+00	0.5964
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	1.855E+00	0.2806
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	8.126E-01	0.1229
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.610E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ra-228	2.947E+00	0.4464	1.141E-03	0.0002	0.000E+00	0.0000	9.429E-01	0.1428	0.000E+00	0.0000	0.000E+00	0.0000	3.741E-02	0.0057
Th-228	8.863E-01	0.1342	5.682E-04	0.0001	0.000E+00	0.0000	5.612E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	6.134E-03	0.0009
Th-232	1.122E+00	0.1700	9.864E-03	0.0015	0.000E+00	0.0000	5.530E-01	0.0838	0.000E+00	0.0000	0.000E+00	0.0000	8.990E-02	0.0136
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.955E+00	0.7506	1.157E-02	0.0018	0.000E+00	0.0000	1.501E+00	0.2274	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-01	0.0202

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Ra-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	3.928E+00	0.5950
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	8.986E-01	0.1361
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	1.775E+00	0.2689
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.602E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.723E+00	0.2619	7.848E-04	0.0001	0.000E+00	0.0000	4.057E-01	0.0617	0.000E+00	0.0000	0.000E+00	0.0000	1.919E-02	0.0029
Th-228	7.013E-02	0.0107	4.496E-05	0.0000	0.000E+00	0.0000	4.441E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.854E-04	0.0001
Th-232	3.145E+00	0.4780	1.073E-02	0.0016	0.000E+00	0.0000	1.091E+00	0.1658	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-01	0.0173
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.938E+00	0.7505	1.156E-02	0.0018	0.000E+00	0.0000	1.497E+00	0.2275	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-01	0.0202

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.149E+00	0.3266
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	7.110E-02	0.0108
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	4.360E+00	0.6626
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.579E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.609E-01	0.0245	7.499E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0055	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-03	0.0003
Th-228	4.991E-05	0.0000	3.200E-08	0.0000	0.000E+00	0.0000	3.161E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.455E-07	0.0000
Th-232	4.758E+00	0.7258	1.146E-02	0.0017	0.000E+00	0.0000	1.456E+00	0.2221	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-01	0.0200
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.919E+00	0.7504	1.154E-02	0.0018	0.000E+00	0.0000	1.492E+00	0.2276	0.000E+00	0.0000	0.000E+00	0.0000	1.329E-01	0.0203

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.985E-01	0.0303
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	5.060E-05	0.0000
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	6.357E+00	0.9697
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.555E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-228	3.256E-05	0.0000	1.518E-08	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-07	0.0000
Th-228	4.801E-16	0.0000	3.078E-19	0.0000	0.000E+00	0.0000	3.040E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.323E-18	0.0000
Th-232	4.892E+00	0.7504	1.148E-02	0.0018	0.000E+00	0.0000	1.484E+00	0.2276	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-01	0.0203
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	4.892E+00	0.7504	1.148E-02	0.0018	0.000E+00	0.0000	1.484E+00	0.2276	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-01	0.0203

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-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	4.017E-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	4.868E-16	0.0000
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	6.520E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	9.093E-16	0.0000	4.240E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.907E-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	0.000E+00	0.0000
Th-232	4.821E+00	0.7504	1.131E-02	0.0018	0.000E+00	0.0000	1.462E+00	0.2276	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-01	0.0203
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	4.821E+00	0.7504	1.131E-02	0.0018	0.000E+00	0.0000	1.462E+00	0.2276	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-01	0.0203

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.122E-15	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-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	6.424E+00	1.0000
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	6.424E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	4.577E+00	0.7504	1.074E-02	0.0018	0.000E+00	0.0000	1.388E+00	0.2276	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-01	0.0203
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.577E+00	0.7504	1.074E-02	0.0018	0.000E+00	0.0000	1.388E+00	0.2276	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-01	0.0203

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	6.100E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.100E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	3.093E+00	2.739E+00	2.148E+00	9.176E-01	8.077E-02	1.634E-05	4.564E-16	0.000E+00	
Ra-228+D	Th-228+D	1.000E+00	4.994E-01	1.203E+00	1.780E+00	1.231E+00	1.177E-01	2.383E-05	6.654E-16	0.000E+00	
Ra-228+D	äDSR(j)		3.592E+00	3.942E+00	3.928E+00	2.149E+00	1.985E-01	4.017E-05	1.122E-15	0.000E+00	
Th-228+D	Th-228+D	1.000E+00	2.665E+00	1.855E+00	8.986E-01	7.110E-02	5.060E-05	4.868E-16	0.000E+00	0.000E+00	
Th-232	Th-232	1.000E+00	1.499E-01	1.499E-01	1.499E-01	1.498E-01	1.496E-01	1.488E-01	1.466E-01	1.393E-01	
Th-232	Ra-228+D	1.000E+00	1.850E-01	5.351E-01	1.121E+00	2.341E+00	3.167E+00	3.230E+00	3.183E+00	3.023E+00	
Th-232	Th-228+D	1.000E+00	2.108E-02	1.276E-01	5.038E-01	1.869E+00	3.040E+00	3.141E+00	3.095E+00	2.938E+00	
Th-232	äDSR(j)		3.560E-01	8.126E-01	1.775E+00	4.360E+00	6.357E+00	6.520E+00	6.424E+00	6.100E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	6.960E+00	6.341E+00	6.364E+00	1.164E+01	1.260E+02	6.223E+05	*2.726E+14	*2.726E+14	
Th-228	9.381E+00	1.348E+01	2.782E+01	3.516E+02	4.940E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	7.023E+01	3.076E+01	1.408E+01	5.734E+00	3.933E+00	3.834E+00	3.891E+00	4.098E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	1.880 ñ 0.004	4.022E+00	6.217E+00	3.592E+00	6.960E+00
Th-228	1.000E+00	0.000E+00	2.665E+00	9.381E+00	2.665E+00	9.381E+00
Th-232	1.000E+00	62.0 ñ 0.1	6.534E+00	3.826E+00	3.560E-01	7.023E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00		3.093E+00	2.739E+00	2.148E+00	9.176E-01	8.077E-02	1.634E-05	4.564E-16	0.000E+00	
Ra-228	Th-232	1.000E+00		1.850E-01	5.351E-01	1.121E+00	2.341E+00	3.167E+00	3.230E+00	3.183E+00	3.023E+00	
Ra-228	äDOSE(j)			3.278E+00	3.274E+00	3.269E+00	3.259E+00	3.248E+00	3.230E+00	3.183E+00	3.023E+00	
Th-228	Ra-228	1.000E+00		4.994E-01	1.203E+00	1.780E+00	1.231E+00	1.177E-01	2.383E-05	6.654E-16	0.000E+00	
Th-228	Th-228	1.000E+00		2.665E+00	1.855E+00	8.986E-01	7.110E-02	5.060E-05	4.868E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00		2.108E-02	1.276E-01	5.038E-01	1.869E+00	3.040E+00	3.141E+00	3.095E+00	2.938E+00	
Th-228	äDOSE(j)			3.186E+00	3.186E+00	3.183E+00	3.171E+00	3.158E+00	3.141E+00	3.095E+00	2.938E+00	
Th-232	Th-232	1.000E+00		1.499E-01	1.499E-01	1.499E-01	1.498E-01	1.496E-01	1.488E-01	1.466E-01	1.393E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00		1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00		0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):			1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00		0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00		1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00		0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):			1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.10 seconds

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-232

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3000 SM TH-232.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

#####

#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.

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	3.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRAC
R011	Length parallel to aquifer flow (m)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3000.00 square meters	Ra-228 1.000E+00
Thickness: 1.50 meters	Th-228 1.000E+00
Cover Depth: 0.00 meters	Th-232 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.718E+00	6.715E+00	6.707E+00	6.684E+00	6.659E+00	6.623E+00	6.526E+00	6.197E+00
M(t):	2.687E-01	2.686E-01	2.683E-01	2.674E-01	2.664E-01	2.649E-01	2.611E-01	2.479E-01

Maximum TDOSE(t): 6.718E+00 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-228	2.255E+00	0.3357	3.795E-04	0.0001	0.000E+00	0.0000	1.343E+00	0.1999	0.000E+00	0.0000	0.000E+00	0.0000	3.978E-02	0.0059
Th-228	2.683E+00	0.3994	1.890E-03	0.0003	0.000E+00	0.0000	1.665E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-02	0.0027
Th-232	1.291E-01	0.0192	1.072E-02	0.0016	0.000E+00	0.0000	1.444E-01	0.0215	0.000E+00	0.0000	0.000E+00	0.0000	7.561E-02	0.0113
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.067E+00	0.7543	1.298E-02	0.0019	0.000E+00	0.0000	1.504E+00	0.2239	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-01	0.0199

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-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	3.639E+00	0.5416
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	2.720E+00	0.4048
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	3.598E-01	0.0536
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.718E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.762E+00	0.4114	8.750E-04	0.0001	0.000E+00	0.0000	1.196E+00	0.1781	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-02	0.0060
Th-228	1.867E+00	0.2781	1.315E-03	0.0002	0.000E+00	0.0000	1.159E-02	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-02	0.0019
Th-232	4.351E-01	0.0648	1.079E-02	0.0016	0.000E+00	0.0000	2.964E-01	0.0441	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-02	0.0120
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.065E+00	0.7543	1.298E-02	0.0019	0.000E+00	0.0000	1.504E+00	0.2239	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-01	0.0199

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.999E+00	0.5956
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	1.893E+00	0.2819
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	8.227E-01	0.1225
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.715E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-232

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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 = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	3.008E+00	0.4486	1.279E-03	0.0002	0.000E+00	0.0000	9.429E-01	0.1406	0.000E+00	0.0000	0.000E+00	0.0000	3.741E-02	0.0056
Th-228	9.046E-01	0.1349	6.372E-04	0.0001	0.000E+00	0.0000	5.613E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	6.134E-03	0.0009
Th-232	1.146E+00	0.1708	1.106E-02	0.0016	0.000E+00	0.0000	5.530E-01	0.0825	0.000E+00	0.0000	0.000E+00	0.0000	8.990E-02	0.0134
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.059E+00	0.7543	1.298E-02	0.0019	0.000E+00	0.0000	1.502E+00	0.2239	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-01	0.0199

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	3.990E+00	0.5949
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	9.170E-01	0.1367
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	1.800E+00	0.2683
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	6.707E+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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.759E+00	0.2631	8.801E-04	0.0001	0.000E+00	0.0000	4.057E-01	0.0607	0.000E+00	0.0000	0.000E+00	0.0000	1.919E-02	0.0029
Th-228	7.158E-02	0.0107	5.042E-05	0.0000	0.000E+00	0.0000	4.441E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.854E-04	0.0001
Th-232	3.211E+00	0.4804	1.203E-02	0.0018	0.000E+00	0.0000	1.091E+00	0.1632	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-01	0.0170
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.041E+00	0.7542	1.297E-02	0.0019	0.000E+00	0.0000	1.497E+00	0.2239	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-01	0.0199

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+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.185E+00	0.3268
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	7.256E-02	0.0109
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	4.427E+00	0.6623
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.684E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	1.642E-01	0.0247	8.409E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0054	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-03	0.0003
Th-228	5.095E-05	0.0000	3.589E-08	0.0000	0.000E+00	0.0000	3.161E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.455E-07	0.0000
Th-232	4.857E+00	0.7294	1.286E-02	0.0019	0.000E+00	0.0000	1.456E+00	0.2187	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-01	0.0197
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.021E+00	0.7541	1.294E-02	0.0019	0.000E+00	0.0000	1.492E+00	0.2240	0.000E+00	0.0000	0.000E+00	0.0000	1.329E-01	0.0200

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	2.018E-01	0.0303
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	5.164E-05	0.0000
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	6.457E+00	0.9697
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.659E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-232

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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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	3.324E-05	0.0000	1.703E-08	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-07	0.0000
Th-228	4.900E-16	0.0000	3.452E-19	0.0000	0.000E+00	0.0000	3.040E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.323E-18	0.0000
Th-232	4.994E+00	0.7540	1.287E-02	0.0019	0.000E+00	0.0000	1.484E+00	0.2240	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-01	0.0200
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	4.994E+00	0.7541	1.287E-02	0.0019	0.000E+00	0.0000	1.484E+00	0.2240	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-01	0.0200

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	4.085E-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	4.967E-16	0.0000
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	6.623E+00	1.0000
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	6.623E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-232

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	9.282E-16	0.0000	4.754E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.907E-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	0.000E+00	0.0000
Th-232	4.921E+00	0.7540	1.268E-02	0.0019	0.000E+00	0.0000	1.462E+00	0.2240	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-01	0.0200
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.921E+00	0.7540	1.268E-02	0.0019	0.000E+00	0.0000	1.462E+00	0.2240	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-01	0.0200

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	1.141E-15	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-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	6.526E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.526E+00	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Th-232

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-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-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-232	4.673E+00	0.7541	1.205E-02	0.0019	0.000E+00	0.0000	1.388E+00	0.2240	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-01	0.0200
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
Total	4.673E+00	0.7541	1.205E-02	0.0019	0.000E+00	0.0000	1.388E+00	0.2240	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-01	0.0200

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA	AAAAAA	AAAAA
Ra-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-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-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	6.197E+00	1.0000
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii
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	6.197E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	3.129E+00	2.771E+00	2.173E+00	9.284E-01	8.172E-02	1.653E-05	4.617E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	5.094E-01	1.228E+00	1.817E+00	1.256E+00	1.201E-01	2.432E-05	6.790E-16	0.000E+00
Ra-228+D	äDSR(j)		3.639E+00	3.999E+00	3.990E+00	2.185E+00	2.018E-01	4.085E-05	1.141E-15	0.000E+00
Th-228+D	Th-228+D	1.000E+00	2.720E+00	1.893E+00	9.170E-01	7.256E-02	5.164E-05	4.967E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	1.511E-01	1.511E-01	1.511E-01	1.510E-01	1.508E-01	1.500E-01	1.478E-01	1.403E-01
Th-232	Ra-228+D	1.000E+00	1.872E-01	5.415E-01	1.134E+00	2.369E+00	3.204E+00	3.268E+00	3.221E+00	3.058E+00
Th-232	Th-228+D	1.000E+00	2.150E-02	1.302E-01	5.141E-01	1.907E+00	3.102E+00	3.205E+00	3.158E+00	2.998E+00
Th-232	äDSR(j)		3.598E-01	8.227E-01	1.800E+00	4.427E+00	6.457E+00	6.623E+00	6.526E+00	6.197E+00
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	6.871E+00	6.251E+00	6.266E+00	1.144E+01	1.239E+02	6.120E+05	*2.726E+14	*2.726E+14	
Th-228	9.192E+00	1.321E+01	2.726E+01	3.446E+02	4.841E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	6.948E+01	3.039E+01	1.389E+01	5.647E+00	3.872E+00	3.775E+00	3.831E+00	4.035E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	1.894 ñ 0.004	4.082E+00	6.124E+00	3.639E+00	6.871E+00
Th-228	1.000E+00	0.000E+00	2.720E+00	9.192E+00	2.720E+00	9.192E+00
Th-232	1.000E+00	62.0 ñ 0.1	6.638E+00	3.766E+00	3.598E-01	6.948E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00		3.129E+00	2.771E+00	2.173E+00	9.284E-01	8.172E-02	1.653E-05	4.617E-16	0.000E+00	
Ra-228	Th-232	1.000E+00		1.872E-01	5.415E-01	1.134E+00	2.369E+00	3.204E+00	3.268E+00	3.221E+00	3.058E+00	
Ra-228	äDOSE(j)			3.316E+00	3.313E+00	3.308E+00	3.297E+00	3.286E+00	3.268E+00	3.221E+00	3.058E+00	
Th-228	Ra-228	1.000E+00		5.094E-01	1.228E+00	1.817E+00	1.256E+00	1.201E-01	2.432E-05	6.790E-16	0.000E+00	
Th-228	Th-228	1.000E+00		2.720E+00	1.893E+00	9.170E-01	7.256E-02	5.164E-05	4.967E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00		2.150E-02	1.302E-01	5.141E-01	1.907E+00	3.102E+00	3.205E+00	3.158E+00	2.998E+00	
Th-228	äDOSE(j)			3.251E+00	3.251E+00	3.248E+00	3.236E+00	3.222E+00	3.205E+00	3.158E+00	2.998E+00	
Th-232	Th-232	1.000E+00		1.511E-01	1.511E-01	1.511E-01	1.510E-01	1.508E-01	1.500E-01	1.478E-01	1.403E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
Ra-228	Ra-228	1.000E+00		1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00		0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):			1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00		0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00		1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00		0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):			1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00		1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii

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

RESCALC.EXE execution time = 1.17 seconds

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Th-232

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1 DCF's for external ground radiation, (mrem/yr)/(pCi/g)				
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1(1)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1(2)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1(3)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(4)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1(5)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1(6)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1(7)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1(8)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1(9)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1(10)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1(11)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2(1)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2(2)
B-1	Th-232	1.640E+00	1.640E+00	DCF2(3)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3(1)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3(2)
D-1	Th-232	2.730E-03	2.730E-03	DCF3(3)
D-34 Food transfer factors:				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-03	1.000E-03	RTF(1,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	1.000E-03	1.000E-03	RTF(1,3)
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(2,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Th-232 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(3,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	1.000E-04	1.000E-04	RTF(3,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(3,3)
D-5 Bioaccumulation factors, fresh water, L/kg:				
D-5	Ra-228+D , fish	5.000E+01	5.000E+01	BIOFAC(1,1)
D-5	Ra-228+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(1,2)
D-5	Th-228+D , fish	1.000E+02	1.000E+02	BIOFAC(2,1)
D-5	Th-228+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(2,2)
D-5	Th-232 , fish	1.000E+02	1.000E+02	BIOFAC(3,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(3,2)

#####

#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 Harshaw OU2 Model AF 10000 SM Th-232

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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)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): Ra-228	1.000E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Th-228	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Th-232	1.000E+00	0.000E+00	---	S1(3)
R012	Concentration in groundwater (pCi/L): Ra-228	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Th-228	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Th-232	not used	0.000E+00	---	W1(3)
=====					
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table draw rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Ra-228				
R016	Contaminated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU(1,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(2,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU(3,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS

	User	Used by RESRAD	Parameter
Menu	Input	Default (If different from user input)	Name
XX			
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)	4.690E+02 1.600E+02	--- DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01 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	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	5.000E-02 -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

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	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	1.000E+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)	not used	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)	not used	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	not used	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	not used	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	not used	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

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

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

Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 10000.00 square meters	Ra-228	1.000E+00
Thickness: 1.50 meters	Th-228	1.000E+00
Cover Depth: 0.00 meters	Th-232	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.862E+00	6.858E+00	6.850E+00	6.827E+00	6.801E+00	6.765E+00	6.666E+00	6.329E+00
M(t):	2.745E-01	2.743E-01	2.740E-01	2.731E-01	2.720E-01	2.706E-01	2.666E-01	2.532E-01

Maximum TDOSE(t): 6.862E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.320E+00	0.3381	4.297E-04	0.0001	0.000E+00	0.0000	1.343E+00	0.1958	0.000E+00	0.0000	0.000E+00	0.0000	3.978E-02	0.0058
Th-228	2.756E+00	0.4016	2.140E-03	0.0003	0.000E+00	0.0000	1.665E-02	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	1.819E-02	0.0027
Th-232	1.328E-01	0.0194	1.213E-02	0.0018	0.000E+00	0.0000	1.444E-01	0.0210	0.000E+00	0.0000	0.000E+00	0.0000	7.561E-02	0.0110
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.209E+00	0.7592	1.470E-02	0.0021	0.000E+00	0.0000	1.504E+00	0.2192	0.000E+00	0.0000	0.000E+00	0.0000	1.336E-01	0.0195

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	3.704E+00	0.5398
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	2.793E+00	0.4070
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	3.650E-01	0.0532
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.862E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	2.841E+00	0.4142	9.907E-04	0.0001	0.000E+00	0.0000	1.196E+00	0.1743	0.000E+00	0.0000	0.000E+00	0.0000	4.042E-02	0.0059
Th-228	1.918E+00	0.2797	1.489E-03	0.0002	0.000E+00	0.0000	1.159E-02	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	1.266E-02	0.0018
Th-232	4.476E-01	0.0653	1.222E-02	0.0018	0.000E+00	0.0000	2.964E-01	0.0432	0.000E+00	0.0000	0.000E+00	0.0000	8.046E-02	0.0117
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.206E+00	0.7591	1.470E-02	0.0021	0.000E+00	0.0000	1.504E+00	0.2192	0.000E+00	0.0000	0.000E+00	0.0000	1.335E-01	0.0195

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	4.078E+00	0.5946
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	1.944E+00	0.2834
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	8.367E-01	0.1220
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.858E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	3.093E+00	0.4515	1.449E-03	0.0002	0.000E+00	0.0000	9.429E-01	0.1377	0.000E+00	0.0000	0.000E+00	0.0000	3.741E-02	0.0055
Th-228	9.292E-01	0.1357	7.215E-04	0.0001	0.000E+00	0.0000	5.614E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	6.134E-03	0.0009
Th-232	1.178E+00	0.1720	1.252E-02	0.0018	0.000E+00	0.0000	5.530E-01	0.0807	0.000E+00	0.0000	0.000E+00	0.0000	8.990E-02	0.0131
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.200E+00	0.7592	1.469E-02	0.0021	0.000E+00	0.0000	1.502E+00	0.2192	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-01	0.0195

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	4.075E+00	0.5948
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	9.417E-01	0.1375
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	1.834E+00	0.2677
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.850E+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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-228	1.808E+00	0.2648	9.965E-04	0.0001	0.000E+00	0.0000	4.057E-01	0.0594	0.000E+00	0.0000	0.000E+00	0.0000	1.919E-02	0.0028
Th-228	7.352E-02	0.0108	5.708E-05	0.0000	0.000E+00	0.0000	4.442E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	4.854E-04	0.0001
Th-232	3.301E+00	0.4835	1.363E-02	0.0020	0.000E+00	0.0000	1.091E+00	0.1598	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-01	0.0166
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.182E+00	0.7591	1.468E-02	0.0022	0.000E+00	0.0000	1.497E+00	0.2193	0.000E+00	0.0000	0.000E+00	0.0000	1.332E-01	0.0195

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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	2.234E+00	0.3272
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	7.451E-02	0.0109
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	4.518E+00	0.6619
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.827E+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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-228	1.688E-01	0.0248	9.521E-05	0.0000	0.000E+00	0.0000	3.577E-02	0.0053	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-03	0.0003
Th-228	5.233E-05	0.0000	4.063E-08	0.0000	0.000E+00	0.0000	3.161E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.455E-07	0.0000
Th-232	4.993E+00	0.7341	1.456E-02	0.0021	0.000E+00	0.0000	1.456E+00	0.2141	0.000E+00	0.0000	0.000E+00	0.0000	1.311E-01	0.0193
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	5.162E+00	0.7590	1.465E-02	0.0022	0.000E+00	0.0000	1.492E+00	0.2194	0.000E+00	0.0000	0.000E+00	0.0000	1.329E-01	0.0195

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA	AAAAAAAAAA	AAAAAA
Ra-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	2.064E-01	0.0303
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	5.303E-05	0.0000
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	6.595E+00	0.9696
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	6.801E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	3.416E-05	0.0000	1.928E-08	0.0000	0.000E+00	0.0000	7.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.548E-07	0.0000
Th-228	5.034E-16	0.0000	3.908E-19	0.0000	0.000E+00	0.0000	3.041E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.323E-18	0.0000
Th-232	5.134E+00	0.7589	1.457E-02	0.0022	0.000E+00	0.0000	1.484E+00	0.2194	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-01	0.0195
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
Total	5.134E+00	0.7589	1.457E-02	0.0022	0.000E+00	0.0000	1.484E+00	0.2194	0.000E+00	0.0000	0.000E+00	0.0000	1.322E-01	0.0195

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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	4.178E-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	5.101E-16	0.0000
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	6.765E+00	1.0000
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii
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	6.765E+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 = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-228	9.540E-16	0.0000	5.383E-19	0.0000	0.000E+00	0.0000	2.021E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.907E-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	0.000E+00	0.0000
Th-232	5.059E+00	0.7589	1.436E-02	0.0022	0.000E+00	0.0000	1.462E+00	0.2194	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-01	0.0195
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
Total	5.059E+00	0.7589	1.436E-02	0.0022	0.000E+00	0.0000	1.462E+00	0.2194	0.000E+00	0.0000	0.000E+00	0.0000	1.302E-01	0.0195

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
Ra-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	1.167E-15	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-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	6.666E+00	1.0000
iiiiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii	iiiiiiii	iiiiii
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	6.666E+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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-232	4.803E+00	0.7589	1.364E-02	0.0022	0.000E+00	0.0000	1.388E+00	0.2194	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-01	0.0195
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	4.803E+00	0.7589	1.364E-02	0.0022	0.000E+00	0.0000	1.388E+00	0.2194	0.000E+00	0.0000	0.000E+00	0.0000	1.237E-01	0.0195

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA	AAAAAAAA	AAAAAA
Ra-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-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-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	6.329E+00	1.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	6.329E+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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03			
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228+D	Ra-228+D	1.000E+00	3.181E+00	2.817E+00	2.209E+00	9.437E-01	8.307E-02	1.681E-05	4.693E-16	0.000E+00
Ra-228+D	Th-228+D	1.000E+00	5.229E-01	1.261E+00	1.865E+00	1.290E+00	1.233E-01	2.497E-05	6.972E-16	0.000E+00
Ra-228+D	äDSR(j)		3.704E+00	4.078E+00	4.075E+00	2.234E+00	2.064E-01	4.178E-05	1.167E-15	0.000E+00
Th-228+D	Th-228+D	1.000E+00	2.793E+00	1.944E+00	9.417E-01	7.451E-02	5.303E-05	5.101E-16	0.000E+00	0.000E+00
Th-232	Th-232	1.000E+00	1.525E-01	1.525E-01	1.525E-01	1.524E-01	1.522E-01	1.514E-01	1.492E-01	1.417E-01
Th-232	Ra-228+D	1.000E+00	1.904E-01	5.505E-01	1.153E+00	2.408E+00	3.257E+00	3.322E+00	3.274E+00	3.109E+00
Th-232	Th-228+D	1.000E+00	2.206E-02	1.336E-01	5.278E-01	1.958E+00	3.185E+00	3.291E+00	3.243E+00	3.078E+00
Th-232	äDSR(j)		3.650E-01	8.367E-01	1.834E+00	4.518E+00	6.595E+00	6.765E+00	6.666E+00	6.329E+00
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

The DSR includes contributions from associated (half-life ó 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	6.750E+00	6.131E+00	6.136E+00	1.119E+01	1.211E+02	5.984E+05	*2.726E+14	*2.726E+14	
Th-228	8.951E+00	1.286E+01	2.655E+01	3.355E+02	4.714E+05	*8.195E+14	*8.195E+14	*8.195E+14	
Th-232	6.850E+01	2.988E+01	1.363E+01	5.533E+00	3.791E+00	3.696E+00	3.751E+00	3.950E+00	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
Ra-228	1.000E+00	1.912 ñ 0.004	4.166E+00	6.001E+00	3.704E+00	6.750E+00
Th-228	1.000E+00	0.000E+00	2.793E+00	8.951E+00	2.793E+00	8.951E+00
Th-232	1.000E+00	62.2 ñ 0.1	6.779E+00	3.688E+00	3.650E-01	6.850E+01
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Ra-228	Ra-228	1.000E+00	3.181E+00	2.817E+00	2.209E+00	9.437E-01	8.307E-02	1.681E-05	4.693E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	1.904E-01	5.505E-01	1.153E+00	2.408E+00	3.257E+00	3.322E+00	3.274E+00	3.109E+00	
Ra-228	äDOSE(j)		3.371E+00	3.367E+00	3.362E+00	3.351E+00	3.340E+00	3.322E+00	3.274E+00	3.109E+00	
Th-228	Ra-228	1.000E+00	5.229E-01	1.261E+00	1.865E+00	1.290E+00	1.233E-01	2.497E-05	6.972E-16	0.000E+00	
Th-228	Th-228	1.000E+00	2.793E+00	1.944E+00	9.417E-01	7.451E-02	5.303E-05	5.101E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	2.206E-02	1.336E-01	5.278E-01	1.958E+00	3.185E+00	3.291E+00	3.243E+00	3.078E+00	
Th-228	äDOSE(j)		3.338E+00	3.338E+00	3.335E+00	3.323E+00	3.309E+00	3.291E+00	3.243E+00	3.078E+00	
Th-232	Th-232	1.000E+00	1.525E-01	1.525E-01	1.525E-01	1.524E-01	1.522E-01	1.514E-01	1.492E-01	1.417E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	
Ra-228	Ra-228	1.000E+00	1.000E+00	8.856E-01	6.945E-01	2.967E-01	2.612E-02	5.284E-06	1.476E-16	0.000E+00	
Ra-228	Th-232	1.000E+00	0.000E+00	1.135E-01	3.030E-01	6.974E-01	9.646E-01	9.854E-01	9.710E-01	9.222E-01	
Ra-228	äS(j):		1.000E+00	9.991E-01	9.975E-01	9.941E-01	9.907E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	Ra-228	1.000E+00	0.000E+00	2.851E-01	5.375E-01	4.061E-01	3.925E-02	7.948E-06	2.219E-16	0.000E+00	
Th-228	Th-228	1.000E+00	1.000E+00	6.960E-01	3.372E-01	2.668E-02	1.899E-05	1.826E-16	0.000E+00	0.000E+00	
Th-228	Th-232	1.000E+00	0.000E+00	1.864E-02	1.242E-01	5.623E-01	9.515E-01	9.854E-01	9.710E-01	9.222E-01	
Th-228	äS(j):		1.000E+00	9.998E-01	9.989E-01	9.951E-01	9.908E-01	9.854E-01	9.710E-01	9.222E-01	
Th-232	Th-232	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.993E-01	9.978E-01	9.927E-01	9.781E-01	9.290E-01	
iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	iiiiiii	

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

RESCALC.EXE execution time = 1.15 seconds

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TOTAL U.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210, fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210, crustacea and mollusks	2.000E+04	2.000E+04	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)

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#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 Harshaw OU2 Model AF 1 SM Total U

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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)	1.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)

R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

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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	not used	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	not used	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	not used	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

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	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 Harshaw OU2 Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	8.223E-06	0.0004	1.772E-04	0.0087	0.000E+00	0.0000	8.417E-03	0.4126	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-06	0.0002
U-235	6.437E-04	0.0316	7.597E-06	0.0004	0.000E+00	0.0000	3.659E-04	0.0179	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-07	0.0000
U-238	2.623E-03	0.1286	1.584E-04	0.0078	0.000E+00	0.0000	7.992E-03	0.3918	0.000E+00	0.0000	0.000E+00	0.0000	3.495E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	3.275E-03	0.1605	3.432E-04	0.0168	0.000E+00	0.0000	1.677E-02	0.8223	0.000E+00	0.0000	0.000E+00	0.0000	7.335E-06	0.0004

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.606E-03	0.4219
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	1.017E-03	0.0499
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	1.078E-02	0.5283
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.040E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TOTAL U.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.
U-234	8.084E-06	0.0004	1.742E-04	0.0087	0.000E+00	0.0000	8.275E-03	0.4126	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-06	0.0002
U-235	6.328E-04	0.0316	7.470E-06	0.0004	0.000E+00	0.0000	3.597E-04	0.0179	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-07	0.0000
U-238	2.579E-03	0.1286	1.557E-04	0.0078	0.000E+00	0.0000	7.857E-03	0.3918	0.000E+00	0.0000	0.000E+00	0.0000	3.435E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.219E-03	0.1605	3.374E-04	0.0168	0.000E+00	0.0000	1.649E-02	0.8223	0.000E+00	0.0000	0.000E+00	0.0000	7.211E-06	0.0004

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.
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	8.461E-03	0.4219
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	1.000E-03	0.0499
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	1.059E-02	0.5283
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.006E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TOTAL U.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 = 3.000E+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.
U-234	7.816E-06	0.0004	1.683E-04	0.0087	0.000E+00	0.0000	7.996E-03	0.4126	0.000E+00	0.0000	0.000E+00	0.0000	3.496E-06	0.0002
U-235	6.115E-04	0.0316	7.223E-06	0.0004	0.000E+00	0.0000	3.477E-04	0.0179	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-07	0.0000
U-238	2.492E-03	0.1286	1.505E-04	0.0078	0.000E+00	0.0000	7.592E-03	0.3918	0.000E+00	0.0000	0.000E+00	0.0000	3.320E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.111E-03	0.1605	3.260E-04	0.0168	0.000E+00	0.0000	1.594E-02	0.8223	0.000E+00	0.0000	0.000E+00	0.0000	6.969E-06	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.176E-03	0.4219
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	9.665E-04	0.0499
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	1.024E-02	0.5283
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	1.938E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TOTAL U.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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	6.969E-06	0.0004	1.493E-04	0.0087	0.000E+00	0.0000	7.094E-03	0.4126	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-06	0.0002
U-235	5.425E-04	0.0316	6.429E-06	0.0004	0.000E+00	0.0000	3.090E-04	0.0180	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-07	0.0000
U-238	2.210E-03	0.1286	1.335E-04	0.0078	0.000E+00	0.0000	6.735E-03	0.3917	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.760E-03	0.1605	2.893E-04	0.0168	0.000E+00	0.0000	1.414E-02	0.8223	0.000E+00	0.0000	0.000E+00	0.0000	6.183E-06	0.0004

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	7.253E-03	0.4219
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	8.580E-04	0.0499
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	9.082E-03	0.5282
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.719E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 1 SM TOTAL U.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	5.206E-06	0.0004	1.061E-04	0.0087	0.000E+00	0.0000	5.039E-03	0.4125	0.000E+00	0.0000	0.000E+00	0.0000	2.204E-06	0.0002
U-235	3.855E-04	0.0316	4.652E-06	0.0004	0.000E+00	0.0000	2.224E-04	0.0182	0.000E+00	0.0000	0.000E+00	0.0000	1.002E-07	0.0000
U-238	1.570E-03	0.1285	9.481E-05	0.0078	0.000E+00	0.0000	4.783E-03	0.3916	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-06	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.960E-03	0.1605	2.056E-04	0.0168	0.000E+00	0.0000	1.004E-02	0.8223	0.000E+00	0.0000	0.000E+00	0.0000	4.395E-06	0.0004

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.153E-03	0.4218
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	6.127E-04	0.0502
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	6.450E-03	0.5280
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.222E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

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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.
U-234	3.595E-06	0.0010	3.217E-05	0.0085	0.000E+00	0.0000	1.534E-03	0.4066	0.000E+00	0.0000	0.000E+00	0.0000	6.683E-07	0.0002
U-235	1.172E-04	0.0311	1.643E-06	0.0004	0.000E+00	0.0000	7.644E-05	0.0203	0.000E+00	0.0000	0.000E+00	0.0000	3.819E-08	0.0000
U-238	4.736E-04	0.1255	2.861E-05	0.0076	0.000E+00	0.0000	1.444E-03	0.3827	0.000E+00	0.0000	0.000E+00	0.0000	6.312E-07	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.944E-04	0.1576	6.243E-05	0.0165	0.000E+00	0.0000	3.054E-03	0.8095	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-06	0.0004

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.024E-05	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-03	0.4243
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-06	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.967E-04	0.0521
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.873E-05	0.0076	0.000E+00	0.0000	0.000E+00	0.0000	1.975E-03	0.5236
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.032E-05	0.0160	0.000E+00	0.0000	0.000E+00	0.0000	3.773E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	8.587E-06	0.0411	1.270E-06	0.0061	0.000E+00	0.0000	1.080E-04	0.5175	0.000E+00	0.0000	0.000E+00	0.0000	2.975E-08	0.0001
U-235	4.378E-06	0.0210	2.076E-07	0.0010	0.000E+00	0.0000	8.619E-06	0.0413	0.000E+00	0.0000	0.000E+00	0.0000	6.249E-09	0.0000
U-238	1.544E-05	0.0740	9.336E-07	0.0045	0.000E+00	0.0000	4.711E-05	0.2256	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-08	0.0001
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.841E-05	0.1361	2.411E-06	0.0115	0.000E+00	0.0000	1.638E-04	0.7844	0.000E+00	0.0000	0.000E+00	0.0000	5.660E-08	0.0003

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.912E-06	0.0331	0.000E+00	0.0000	0.000E+00	0.0000	1.248E-04	0.5979
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.860E-07	0.0033	0.000E+00	0.0000	0.000E+00	0.0000	1.390E-05	0.0666
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.543E-06	0.0313	0.000E+00	0.0000	0.000E+00	0.0000	7.005E-05	0.3355
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.414E-05	0.0677	0.000E+00	0.0000	0.000E+00	0.0000	2.088E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

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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.
U-234	2.112E-05	0.1256	2.192E-07	0.0013	0.000E+00	0.0000	1.463E-04	0.8699	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-08	0.0001
U-235	2.027E-08	0.0001	5.600E-09	0.0000	0.000E+00	0.0000	2.226E-07	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-10	0.0000
U-238	3.492E-09	0.0000	4.231E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-12	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.115E-05	0.1257	2.249E-07	0.0013	0.000E+00	0.0000	1.466E-04	0.8713	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-08	0.0001

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.242E-07	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	1.679E-04	0.9982
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.500E-08	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	2.837E-07	0.0017
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.748E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.594E-07	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	1.682E-04	1.0000

Sum of all water independent and dependent pathways.

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

At specific activity limit

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
U-234	4.890E-01	0.000E+00	1.760E-02	1.421E+03	1.760E-02	1.421E+03
U-235	2.250E-02	0.000E+00	4.521E-02	5.529E+02	4.521E-02	5.529E+02
U-238	4.890E-01	0.000E+00	2.204E-02	1.134E+03	2.204E-02	1.134E+03
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		8.606E-03	8.461E-03	8.176E-03	7.252E-03	5.150E-03	1.584E-03	5.751E-05	3.577E-10	
U-234	U-238	9.999E-01		1.216E-08	3.594E-08	8.109E-08	2.158E-07	4.453E-07	4.513E-07	4.901E-08	1.016E-12	
U-234	äDOSE(j)			8.606E-03	8.461E-03	8.176E-03	7.253E-03	5.150E-03	1.584E-03	5.756E-05	3.587E-10	
Th-230	U-234	1.000E+00		3.429E-08	9.706E-08	2.185E-07	6.119E-07	1.507E-06	3.026E-06	3.610E-06	3.427E-06	
Th-230	U-238	9.999E-01		3.406E-14	2.193E-13	1.095E-12	8.884E-12	5.962E-11	3.138E-10	5.825E-10	5.705E-10	
Th-230	äDOSE(j)			3.429E-08	9.706E-08	2.185E-07	6.120E-07	1.507E-06	3.027E-06	3.611E-06	3.427E-06	
Ra-226	U-234	1.000E+00		4.885E-10	3.560E-09	1.897E-08	1.644E-07	1.236E-06	9.272E-06	3.764E-05	9.320E-05	
Ra-226	U-238	9.999E-01		3.359E-16	5.297E-15	6.248E-14	1.583E-12	3.274E-11	6.677E-10	4.922E-09	1.498E-08	
Ra-226	äDOSE(j)			4.885E-10	3.560E-09	1.897E-08	1.644E-07	1.236E-06	9.273E-06	3.765E-05	9.321E-05	
Pb-210	U-234	1.000E+00		4.477E-12	5.724E-11	5.950E-10	1.365E-08	2.561E-07	4.263E-06	2.468E-05	6.740E-05	
Pb-210	U-238	9.999E-01		2.675E-18	6.981E-17	1.539E-15	1.018E-13	5.390E-12	2.674E-10	3.117E-09	1.082E-08	
Pb-210	äDOSE(j)			4.477E-12	5.724E-11	5.950E-10	1.365E-08	2.561E-07	4.264E-06	2.469E-05	6.741E-05	
Po-210	U-234	1.000E+00		1.088E-13	1.837E-12	2.434E-11	6.769E-10	1.369E-08	2.346E-07	1.391E-06	3.903E-06	
Po-210	U-238	9.999E-01		6.029E-20	2.062E-18	5.871E-17	4.881E-15	2.845E-13	1.821E-11	1.794E-10	6.737E-10	
Po-210	äDOSE(j)			1.088E-13	1.837E-12	2.434E-11	6.769E-10	1.369E-08	2.346E-07	1.391E-06	3.903E-06	
U-235	U-235	1.000E+00		1.017E-03	1.000E-03	9.664E-04	8.573E-04	6.088E-04	1.850E-04	6.289E-06	3.929E-11	
Pa-231	U-235	1.000E+00		1.337E-08	2.234E-08	3.651E-08	8.136E-08	1.753E-07	2.858E-07	2.330E-07	1.409E-08	
Ac-227	U-235	1.000E+00		2.261E-09	1.637E-08	8.492E-08	6.622E-07	3.711E-06	1.137E-05	7.375E-06	2.696E-07	
U-238	U-238	5.400E-05		4.184E-07	4.114E-07	3.975E-07	3.526E-07	2.504E-07	7.703E-08	2.799E-09	1.744E-14	
U-238	U-238	9.999E-01		1.078E-02	1.059E-02	1.024E-02	9.082E-03	6.449E-03	1.975E-03	6.999E-05	4.365E-10	
U-238	äDOSE(j)			1.078E-02	1.059E-02	1.024E-02	9.082E-03	6.449E-03	1.975E-03	6.999E-05	4.366E-10	
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THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Harshaw OU2 Model AF 1 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		

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

RESRAD.EXE execution time = 2.49 seconds

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

Dose Library: FGR 11

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

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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)	3.000E+00	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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 : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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	not used	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	not used	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	not used	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	---	EVSNI
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSNI
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

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	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 Harshaw OU2 Model AF 3 SM Total U

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 3.00 square meters	U-234 4.890E-01
Thickness: 1.50 meters	U-235 2.250E-02
Cover Depth: 0.00 meters	U-238 4.890E-01

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)

XX

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	2.433E-02	2.392E-02	2.312E-02	2.051E-02	1.457E-02	4.608E-03	2.715E-04	1.948E-04
M(t):	9.734E-04	9.569E-04	9.247E-04	8.204E-04	5.828E-04	1.843E-04	1.086E-05	7.793E-06

Maximum TDOSE(t): 2.433E-02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.718E-05	0.0007	1.998E-04	0.0082	0.000E+00	0.0000	8.417E-03	0.3459	0.000E+00	0.0000	0.000E+00	0.0000	1.104E-05	0.0005
U-235	1.393E-03	0.0573	8.566E-06	0.0004	0.000E+00	0.0000	3.659E-04	0.0150	0.000E+00	0.0000	0.000E+00	0.0000	4.802E-07	0.0000
U-238	5.740E-03	0.2359	1.786E-04	0.0073	0.000E+00	0.0000	7.992E-03	0.3284	0.000E+00	0.0000	0.000E+00	0.0000	1.048E-05	0.0004
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	7.151E-03	0.2939	3.870E-04	0.0159	0.000E+00	0.0000	1.677E-02	0.6893	0.000E+00	0.0000	0.000E+00	0.0000	2.201E-05	0.0009

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.645E-03	0.3553
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	1.768E-03	0.0727
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	1.392E-02	0.5721
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.433E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.689E-05	0.0007	1.964E-04	0.0082	0.000E+00	0.0000	8.275E-03	0.3459	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-05	0.0005
U-235	1.370E-03	0.0573	8.423E-06	0.0004	0.000E+00	0.0000	3.597E-04	0.0150	0.000E+00	0.0000	0.000E+00	0.0000	4.724E-07	0.0000
U-238	5.643E-03	0.2359	1.756E-04	0.0073	0.000E+00	0.0000	7.857E-03	0.3284	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-05	0.0004
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	7.030E-03	0.2938	3.804E-04	0.0159	0.000E+00	0.0000	1.649E-02	0.6894	0.000E+00	0.0000	0.000E+00	0.0000	2.163E-05	0.0009

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.499E-03	0.3553
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	1.738E-03	0.0727
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	1.369E-02	0.5721
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.392E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

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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 = 3.000E+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.
U-234	1.633E-05	0.0007	1.898E-04	0.0082	0.000E+00	0.0000	7.997E-03	0.3459	0.000E+00	0.0000	0.000E+00	0.0000	1.049E-05	0.0005
U-235	1.324E-03	0.0573	8.145E-06	0.0004	0.000E+00	0.0000	3.477E-04	0.0150	0.000E+00	0.0000	0.000E+00	0.0000	4.574E-07	0.0000
U-238	5.453E-03	0.2359	1.697E-04	0.0073	0.000E+00	0.0000	7.593E-03	0.3284	0.000E+00	0.0000	0.000E+00	0.0000	9.959E-06	0.0004
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	6.793E-03	0.2938	3.676E-04	0.0159	0.000E+00	0.0000	1.594E-02	0.6894	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-05	0.0009

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.213E-03	0.3553
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	1.680E-03	0.0727
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-02	0.5721
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.312E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TOTAL U.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+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.
U-234	1.457E-05	0.0007	1.684E-04	0.0082	0.000E+00	0.0000	7.094E-03	0.3459	0.000E+00	0.0000	0.000E+00	0.0000	9.306E-06	0.0005
U-235	1.174E-03	0.0573	7.250E-06	0.0004	0.000E+00	0.0000	3.090E-04	0.0151	0.000E+00	0.0000	0.000E+00	0.0000	4.090E-07	0.0000
U-238	4.837E-03	0.2359	1.505E-04	0.0073	0.000E+00	0.0000	6.735E-03	0.3284	0.000E+00	0.0000	0.000E+00	0.0000	8.835E-06	0.0004
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	6.026E-03	0.2938	3.262E-04	0.0159	0.000E+00	0.0000	1.414E-02	0.6894	0.000E+00	0.0000	0.000E+00	0.0000	1.855E-05	0.0009

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+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.
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	7.286E-03	0.3553
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	1.491E-03	0.0727
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	0.5720
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.051E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TOTAL U.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.092E-05	0.0007	1.196E-04	0.0082	0.000E+00	0.0000	5.039E-03	0.3459	0.000E+00	0.0000	0.000E+00	0.0000	6.611E-06	0.0005
U-235	8.346E-04	0.0573	5.245E-06	0.0004	0.000E+00	0.0000	2.224E-04	0.0153	0.000E+00	0.0000	0.000E+00	0.0000	3.005E-07	0.0000
U-238	3.435E-03	0.2358	1.069E-04	0.0073	0.000E+00	0.0000	4.783E-03	0.3283	0.000E+00	0.0000	0.000E+00	0.0000	6.274E-06	0.0004
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.281E-03	0.2938	2.318E-04	0.0159	0.000E+00	0.0000	1.005E-02	0.6894	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-05	0.0009

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.177E-03	0.3553
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-03	0.0729
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	8.332E-03	0.5718
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.457E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TOTAL U.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.
U-234	7.809E-06	0.0017	3.628E-05	0.0079	0.000E+00	0.0000	1.534E-03	0.3329	0.000E+00	0.0000	0.000E+00	0.0000	2.005E-06	0.0004
U-235	2.537E-04	0.0551	1.852E-06	0.0004	0.000E+00	0.0000	7.645E-05	0.0166	0.000E+00	0.0000	0.000E+00	0.0000	1.146E-07	0.0000
U-238	1.037E-03	0.2250	3.227E-05	0.0070	0.000E+00	0.0000	1.444E-03	0.3133	0.000E+00	0.0000	0.000E+00	0.0000	1.894E-06	0.0004
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.298E-03	0.2817	7.039E-05	0.0153	0.000E+00	0.0000	3.054E-03	0.6629	0.000E+00	0.0000	0.000E+00	0.0000	4.013E-06	0.0009

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.072E-05	0.0197	0.000E+00	0.0000	0.000E+00	0.0000	1.671E-03	0.3626
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.061E-06	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	3.362E-04	0.0730
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.619E-05	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	2.601E-03	0.5644
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-04	0.0393	0.000E+00	0.0000	0.000E+00	0.0000	4.608E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TOTAL U.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.914E-05	0.0705	1.432E-06	0.0053	0.000E+00	0.0000	1.080E-04	0.3979	0.000E+00	0.0000	0.000E+00	0.0000	8.926E-08	0.0003
U-235	9.482E-06	0.0349	2.341E-07	0.0009	0.000E+00	0.0000	8.619E-06	0.0317	0.000E+00	0.0000	0.000E+00	0.0000	1.875E-08	0.0001
U-238	3.380E-05	0.1245	1.053E-06	0.0039	0.000E+00	0.0000	4.711E-05	0.1735	0.000E+00	0.0000	0.000E+00	0.0000	6.178E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	6.243E-05	0.2299	2.719E-06	0.0100	0.000E+00	0.0000	1.638E-04	0.6032	0.000E+00	0.0000	0.000E+00	0.0000	1.698E-07	0.0006

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.074E-05	0.0764	0.000E+00	0.0000	0.000E+00	0.0000	1.494E-04	0.5504
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.058E-06	0.0076	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-05	0.0752
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.963E-05	0.0723	0.000E+00	0.0000	0.000E+00	0.0000	1.016E-04	0.3744
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.242E-05	0.1563	0.000E+00	0.0000	0.000E+00	0.0000	2.715E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 3 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	4.712E-05	0.2418	2.472E-07	0.0013	0.000E+00	0.0000	1.463E-04	0.7511	0.000E+00	0.0000	0.000E+00	0.0000	4.610E-08	0.0002
U-235	4.406E-08	0.0002	6.315E-09	0.0000	0.000E+00	0.0000	2.227E-07	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-10	0.0000
U-238	7.784E-09	0.0000	4.771E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.846E-12	0.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.717E-05	0.2421	2.536E-07	0.0013	0.000E+00	0.0000	1.466E-04	0.7524	0.000E+00	0.0000	0.000E+00	0.0000	4.666E-08	0.0002

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.727E-07	0.0035	0.000E+00	0.0000	0.000E+00	0.0000	1.944E-04	0.9979
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-07	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	3.786E-07	0.0019
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.198E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.207E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.781E-07	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	1.948E-04	1.0000

Sum of all water independent and dependent pathways.

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

[illegible]

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
U-234	4.890E-01	0.000E+00	1.768E-02	1.414E+03	1.768E-02	1.414E+03
U-235	2.250E-02	0.000E+00	7.859E-02	3.181E+02	7.859E-02	3.181E+02
U-238	4.890E-01	0.000E+00	2.847E-02	8.781E+02	2.847E-02	8.781E+02
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		8.645E-03	8.499E-03	8.213E-03	7.285E-03	5.173E-03	1.651E-03	7.149E-05	4.421E-10	
U-234	U-238	9.999E-01		1.222E-08	3.611E-08	8.145E-08	2.168E-07	4.473E-07	4.706E-07	6.093E-08	1.256E-12	
U-234	äDOSE(j)			8.645E-03	8.499E-03	8.213E-03	7.286E-03	5.174E-03	1.652E-03	7.156E-05	4.433E-10	
Th-230	U-234	1.000E+00		3.473E-08	9.836E-08	2.214E-07	6.204E-07	1.528E-06	3.068E-06	3.661E-06	3.475E-06	
Th-230	U-238	9.999E-01		3.447E-14	2.222E-13	1.110E-12	9.005E-12	6.044E-11	3.182E-10	5.910E-10	5.790E-10	
Th-230	äDOSE(j)			3.473E-08	9.836E-08	2.215E-07	6.204E-07	1.528E-06	3.069E-06	3.662E-06	3.476E-06	
Ra-226	U-234	1.000E+00		6.361E-10	4.588E-09	2.434E-08	2.104E-07	1.581E-06	1.186E-05	4.813E-05	1.192E-04	
Ra-226	U-238	9.999E-01		4.403E-16	6.850E-15	8.030E-14	2.027E-12	4.188E-11	8.539E-10	6.294E-09	1.916E-08	
Ra-226	äDOSE(j)			6.361E-10	4.588E-09	2.434E-08	2.104E-07	1.581E-06	1.186E-05	4.814E-05	1.192E-04	
Pb-210	U-234	1.000E+00		4.478E-12	5.726E-11	5.952E-10	1.366E-08	2.562E-07	4.265E-06	2.471E-05	6.753E-05	
Pb-210	U-238	9.999E-01		2.676E-18	6.984E-17	1.540E-15	1.019E-13	5.392E-12	2.694E-10	3.122E-09	1.087E-08	
Pb-210	äDOSE(j)			4.478E-12	5.726E-11	5.952E-10	1.366E-08	2.562E-07	4.266E-06	2.471E-05	6.754E-05	
Po-210	U-234	1.000E+00		1.088E-13	1.838E-12	2.437E-11	6.778E-10	1.371E-08	2.353E-07	1.442E-06	4.243E-06	
Po-210	U-238	9.999E-01		6.033E-20	2.063E-18	5.877E-17	4.887E-15	2.849E-13	2.415E-11	1.938E-10	8.239E-10	
Po-210	äDOSE(j)			1.088E-13	1.838E-12	2.437E-11	6.778E-10	1.371E-08	2.353E-07	1.442E-06	4.244E-06	
U-235	U-235	1.000E+00		1.768E-03	1.738E-03	1.680E-03	1.490E-03	1.058E-03	3.232E-04	1.131E-05	7.058E-11	
Pa-231	U-235	1.000E+00		1.556E-08	2.885E-08	5.138E-08	1.227E-07	2.722E-07	4.652E-07	4.970E-07	3.539E-08	
Ac-227	U-235	1.000E+00		2.486E-09	1.791E-08	9.274E-08	7.224E-07	4.048E-06	1.245E-05	8.606E-06	3.431E-07	
U-238	U-238	5.400E-05		4.200E-07	4.129E-07	3.990E-07	3.540E-07	2.514E-07	8.026E-08	3.478E-09	2.155E-14	
U-238	U-238	9.999E-01		1.392E-02	1.369E-02	1.322E-02	1.173E-02	8.331E-03	2.600E-03	1.016E-04	6.314E-10	
U-238	äDOSE(j)			1.392E-02	1.369E-02	1.323E-02	1.173E-02	8.331E-03	2.600E-03	1.016E-04	6.315E-10	
iiiiiiii	iiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 3.64 seconds

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Current	Base	Parameter
Menu	Value#	Case*	Name
XX			
D-1 Th-230	5.480E-04	5.480E-04	DCF3(6)
D-1 U-234	2.830E-04	2.830E-04	DCF3(7)
D-1 U-235+D	2.673E-04	2.660E-04	DCF3(8)
D-1 U-238	2.550E-04	2.550E-04	DCF3(9)
D-1 U-238+D	2.687E-04	2.550E-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 Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34 Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34 Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34 Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34 Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34 Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34 Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34 Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34 Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(4,3)
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 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 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 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 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 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-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)

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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)

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#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 Harshaw OU2 Model AF 10 SM Total U

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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)	1.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

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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	not used	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	not used	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	not used	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

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

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

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g
Area: 10.00 square meters	U-234 4.890E-01
Thickness: 1.50 meters	U-235 2.250E-02
Cover Depth: 0.00 meters	U-238 4.890E-01

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)

XX

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	3.201E-02	3.147E-02	3.041E-02	2.698E-02	1.917E-02	6.424E-03	4.377E-04	2.476E-04
M(t):	1.281E-03	1.259E-03	1.216E-03	1.079E-03	7.667E-04	2.569E-04	1.751E-05	9.905E-06

Maximum TDOSE(t): 3.201E-02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

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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.
U-234	3.469E-05	0.0011	2.277E-04	0.0071	0.000E+00	0.0000	8.417E-03	0.2629	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-05	0.0011
U-235	2.858E-03	0.0893	9.764E-06	0.0003	0.000E+00	0.0000	3.659E-04	0.0114	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-06	0.0000
U-238	1.183E-02	0.3696	2.036E-04	0.0064	0.000E+00	0.0000	7.992E-03	0.2497	0.000E+00	0.0000	0.000E+00	0.0000	3.495E-05	0.0011
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.472E-02	0.4599	4.411E-04	0.0138	0.000E+00	0.0000	1.678E-02	0.5240	0.000E+00	0.0000	0.000E+00	0.0000	7.335E-05	0.0023

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.
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	8.716E-03	0.2723
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	3.235E-03	0.1011
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	2.006E-02	0.6267
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.201E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	3.410E-05	0.0011	2.239E-04	0.0071	0.000E+00	0.0000	8.275E-03	0.2629	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-05	0.0011
U-235	2.809E-03	0.0893	9.601E-06	0.0003	0.000E+00	0.0000	3.597E-04	0.0114	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-06	0.0001
U-238	1.163E-02	0.3695	2.002E-04	0.0064	0.000E+00	0.0000	7.857E-03	0.2497	0.000E+00	0.0000	0.000E+00	0.0000	3.435E-05	0.0011
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.447E-02	0.4599	4.336E-04	0.0138	0.000E+00	0.0000	1.649E-02	0.5240	0.000E+00	0.0000	0.000E+00	0.0000	7.211E-05	0.0023

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.569E-03	0.2723
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	3.180E-03	0.1011
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	1.972E-02	0.6267
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.147E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TOTAL U.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 = 3.000E+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.
U-234	3.297E-05	0.0011	2.163E-04	0.0071	0.000E+00	0.0000	7.997E-03	0.2629	0.000E+00	0.0000	0.000E+00	0.0000	3.496E-05	0.0011
U-235	2.715E-03	0.0893	9.284E-06	0.0003	0.000E+00	0.0000	3.477E-04	0.0114	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-06	0.0001
U-238	1.124E-02	0.3695	1.934E-04	0.0064	0.000E+00	0.0000	7.593E-03	0.2497	0.000E+00	0.0000	0.000E+00	0.0000	3.320E-05	0.0011
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.399E-02	0.4599	4.190E-04	0.0138	0.000E+00	0.0000	1.594E-02	0.5240	0.000E+00	0.0000	0.000E+00	0.0000	6.969E-05	0.0023

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.281E-03	0.2723
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	3.073E-03	0.1011
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	1.906E-02	0.6266
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.041E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TOTAL U.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+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	2.941E-05	0.0011	1.919E-04	0.0071	0.000E+00	0.0000	7.094E-03	0.2629	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-05	0.0011
U-235	2.409E-03	0.0893	8.263E-06	0.0003	0.000E+00	0.0000	3.090E-04	0.0115	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-06	0.0001
U-238	9.969E-03	0.3695	1.716E-04	0.0064	0.000E+00	0.0000	6.736E-03	0.2497	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-05	0.0011
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.241E-02	0.4599	3.718E-04	0.0138	0.000E+00	0.0000	1.414E-02	0.5240	0.000E+00	0.0000	0.000E+00	0.0000	6.183E-05	0.0023

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+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	7.347E-03	0.2723
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	2.727E-03	0.1011
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	1.691E-02	0.6266
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	2.698E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TOTAL U.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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	2.208E-05	0.0012	1.364E-04	0.0071	0.000E+00	0.0000	5.040E-03	0.2629	0.000E+00	0.0000	0.000E+00	0.0000	2.204E-05	0.0011
U-235	1.712E-03	0.0893	5.979E-06	0.0003	0.000E+00	0.0000	2.224E-04	0.0116	0.000E+00	0.0000	0.000E+00	0.0000	1.002E-06	0.0001
U-238	7.079E-03	0.3694	1.219E-04	0.0064	0.000E+00	0.0000	4.783E-03	0.2496	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-05	0.0011
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	8.813E-03	0.4598	2.642E-04	0.0138	0.000E+00	0.0000	1.005E-02	0.5241	0.000E+00	0.0000	0.000E+00	0.0000	4.395E-05	0.0023

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	5.220E-03	0.2723
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	1.941E-03	0.1013
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	1.201E-02	0.6264
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	1.917E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TOTAL U.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.
U-234	1.604E-05	0.0025	4.135E-05	0.0064	0.000E+00	0.0000	1.534E-03	0.2388	0.000E+00	0.0000	0.000E+00	0.0000	6.683E-06	0.0010
U-235	5.204E-04	0.0810	2.111E-06	0.0003	0.000E+00	0.0000	7.645E-05	0.0119	0.000E+00	0.0000	0.000E+00	0.0000	3.819E-07	0.0001
U-238	2.136E-03	0.3326	3.678E-05	0.0057	0.000E+00	0.0000	1.444E-03	0.2247	0.000E+00	0.0000	0.000E+00	0.0000	6.312E-06	0.0010
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.673E-03	0.4161	8.024E-05	0.0125	0.000E+00	0.0000	3.054E-03	0.4755	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-05	0.0021

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.024E-04	0.0471	0.000E+00	0.0000	0.000E+00	0.0000	1.901E-03	0.2959
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-05	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	6.128E-04	0.0954
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.873E-04	0.0447	0.000E+00	0.0000	0.000E+00	0.0000	3.910E-03	0.6087
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.032E-04	0.0939	0.000E+00	0.0000	0.000E+00	0.0000	6.424E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TOTAL U.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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	3.977E-05	0.0909	1.632E-06	0.0037	0.000E+00	0.0000	1.080E-04	0.2468	0.000E+00	0.0000	0.000E+00	0.0000	2.975E-07	0.0007
U-235	1.945E-05	0.0444	2.669E-07	0.0006	0.000E+00	0.0000	8.619E-06	0.0197	0.000E+00	0.0000	0.000E+00	0.0000	6.249E-08	0.0001
U-238	6.966E-05	0.1591	1.200E-06	0.0027	0.000E+00	0.0000	4.711E-05	0.1076	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-07	0.0005
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.289E-04	0.2944	3.099E-06	0.0071	0.000E+00	0.0000	1.638E-04	0.3741	0.000E+00	0.0000	0.000E+00	0.0000	5.660E-07	0.0013

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.912E-05	0.1579	0.000E+00	0.0000	0.000E+00	0.0000	2.189E-04	0.5000
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.860E-06	0.0157	0.000E+00	0.0000	0.000E+00	0.0000	3.526E-05	0.0806
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.543E-05	0.1495	0.000E+00	0.0000	0.000E+00	0.0000	1.836E-04	0.4194
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.414E-04	0.3231	0.000E+00	0.0000	0.000E+00	0.0000	4.377E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 10 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	9.789E-05	0.3953	2.818E-07	0.0011	0.000E+00	0.0000	1.463E-04	0.5910	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-07	0.0006
U-235	9.052E-08	0.0004	7.198E-09	0.0000	0.000E+00	0.0000	2.227E-07	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-09	0.0000
U-238	1.617E-08	0.0001	5.439E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-11	0.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	9.800E-05	0.3958	2.890E-07	0.0012	0.000E+00	0.0000	1.466E-04	0.5920	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-07	0.0006

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.242E-06	0.0091	0.000E+00	0.0000	0.000E+00	0.0000	2.469E-04	0.9971
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.500E-07	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	6.722E-07	0.0027
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.146E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.594E-06	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	2.476E-04	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA
U-234	U-234	1.000E+00	1.782E-02	1.752E-02	1.693E-02	1.502E-02	1.067E-02	3.836E-03	2.455E-04	1.503E-09
U-234	Th-230	1.000E+00	7.260E-08	2.058E-07	4.636E-07	1.299E-06	3.199E-06	6.427E-06	7.675E-06	7.286E-06
U-234	Ra-226+D	1.000E+00	1.891E-09	1.349E-08	7.122E-08	6.141E-07	4.611E-06	3.457E-05	1.403E-04	3.476E-04
U-234	Pb-210+D	1.000E+00	9.165E-12	1.172E-10	1.219E-09	2.796E-08	5.245E-07	8.733E-06	5.069E-05	1.390E-04
U-234	Po-210	1.000E+00	2.231E-13	3.772E-12	5.003E-11	1.393E-09	2.817E-08	4.857E-07	3.314E-06	1.111E-05
U-234	äDSR(j)		1.782E-02	1.752E-02	1.693E-02	1.502E-02	1.067E-02	3.887E-03	4.476E-04	5.049E-04
U-235+D	U-235+D	1.000E+00	1.438E-01	1.413E-01	1.366E-01	1.212E-01	8.604E-02	2.655E-02	9.796E-04	6.102E-09
U-235+D	Pa-231	1.000E+00	8.875E-07	1.865E-06	3.614E-06	9.152E-06	2.076E-05	3.824E-05	5.776E-05	4.703E-06
U-235+D	Ac-227+D	1.000E+00	1.300E-07	9.298E-07	4.799E-06	3.733E-05	2.090E-04	6.508E-04	5.299E-04	2.516E-05
U-235+D	äDSR(j)		1.438E-01	1.414E-01	1.366E-01	1.212E-01	8.627E-02	2.724E-02	1.567E-03	2.987E-05
U-238	U-238	5.400E-05	8.648E-07	8.502E-07	8.216E-07	7.288E-07	5.176E-07	1.863E-07	1.194E-08	7.326E-14
U-238+D	U-238+D	9.999E-01	4.102E-02	4.033E-02	3.897E-02	3.457E-02	2.455E-02	7.995E-03	3.752E-04	2.319E-09
U-238+D	U-234	9.999E-01	2.519E-08	7.444E-08	1.679E-07	4.471E-07	9.222E-07	1.093E-06	2.092E-07	4.270E-12
U-238+D	Th-230	9.999E-01	7.197E-14	4.646E-13	2.323E-12	1.886E-11	1.266E-10	6.667E-10	1.241E-09	1.217E-09
U-238+D	Ra-226+D	9.999E-01	1.317E-15	2.022E-14	2.354E-13	5.921E-12	1.222E-10	2.491E-09	1.836E-08	5.589E-08
U-238+D	Pb-210+D	9.999E-01	5.477E-18	1.429E-16	3.152E-15	2.086E-13	1.104E-11	5.656E-10	6.423E-09	2.259E-08
U-238+D	Po-210	9.999E-01	1.236E-19	4.232E-18	1.207E-16	1.004E-14	5.853E-13	9.506E-11	4.990E-10	2.760E-09
U-238+D	äDSR(j)		4.102E-02	4.033E-02	3.897E-02	3.457E-02	2.455E-02	7.996E-03	3.754E-04	8.478E-08
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

The DSR includes contributions from associated (half-life > 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
U-234	1.403E+03	1.427E+03	1.476E+03	1.664E+03	2.342E+03	6.432E+03	5.586E+04	4.951E+04	
U-235	1.739E+02	1.769E+02	1.830E+02	2.062E+02	2.898E+02	9.179E+02	1.595E+04	8.369E+05	
U-238	6.094E+02	6.199E+02	6.415E+02	7.231E+02	1.018E+03	3.126E+03	6.659E+04	*3.361E+05	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
U-234	4.890E-01	0.000E+00	1.782E-02	1.403E+03	1.782E-02	1.403E+03
U-235	2.250E-02	0.000E+00	1.438E-01	1.739E+02	1.438E-01	1.739E+02
U-238	4.890E-01	0.000E+00	4.103E-02	6.094E+02	4.103E-02	6.094E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	8.716E-03	8.569E-03	8.281E-03	7.346E-03	5.216E-03	1.876E-03	1.201E-04	7.351E-10		
U-234	U-238	9.999E-01	1.232E-08	3.640E-08	8.213E-08	2.186E-07	4.510E-07	5.345E-07	1.023E-07	2.088E-12		
U-234	äDOSE(j)		8.716E-03	8.569E-03	8.281E-03	7.346E-03	5.216E-03	1.877E-03	1.202E-04	7.372E-10		
Th-230	U-234	1.000E+00	3.550E-08	1.007E-07	2.267E-07	6.353E-07	1.564E-06	3.143E-06	3.753E-06	3.563E-06		
Th-230	U-238	9.999E-01	3.520E-14	2.272E-13	1.136E-12	9.221E-12	6.190E-11	3.260E-10	6.070E-10	5.949E-10		
Th-230	äDOSE(j)		3.550E-08	1.007E-07	2.267E-07	6.353E-07	1.564E-06	3.143E-06	3.754E-06	3.563E-06		
Ra-226	U-234	1.000E+00	9.245E-10	6.596E-09	3.483E-08	3.003E-07	2.255E-06	1.691E-05	6.863E-05	1.700E-04		
Ra-226	U-238	9.999E-01	6.442E-16	9.885E-15	1.151E-13	2.895E-12	5.974E-11	1.218E-09	8.976E-09	2.733E-08		
Ra-226	äDOSE(j)		9.245E-10	6.596E-09	3.483E-08	3.003E-07	2.255E-06	1.691E-05	6.864E-05	1.700E-04		
Pb-210	U-234	1.000E+00	4.482E-12	5.731E-11	5.959E-10	1.367E-08	2.565E-07	4.271E-06	2.479E-05	6.796E-05		
Pb-210	U-238	9.999E-01	2.678E-18	6.990E-17	1.541E-15	1.020E-13	5.398E-12	2.766E-10	3.141E-09	1.105E-08		
Pb-210	äDOSE(j)		4.482E-12	5.731E-11	5.959E-10	1.367E-08	2.565E-07	4.271E-06	2.479E-05	6.798E-05		
Po-210	U-234	1.000E+00	1.091E-13	1.844E-12	2.447E-11	6.810E-10	1.378E-08	2.375E-07	1.621E-06	5.434E-06		
Po-210	U-238	9.999E-01	6.045E-20	2.070E-18	5.900E-17	4.910E-15	2.862E-13	4.649E-11	2.440E-10	1.350E-09		
Po-210	äDOSE(j)		1.091E-13	1.844E-12	2.447E-11	6.810E-10	1.378E-08	2.376E-07	1.621E-06	5.435E-06		
U-235	U-235	1.000E+00	3.235E-03	3.180E-03	3.073E-03	2.726E-03	1.936E-03	5.973E-04	2.204E-05	1.373E-10		
Pa-231	U-235	1.000E+00	1.997E-08	4.196E-08	8.131E-08	2.059E-07	4.672E-07	8.603E-07	1.300E-06	1.058E-07		
Ac-227	U-235	1.000E+00	2.924E-09	2.092E-08	1.080E-07	8.399E-07	4.703E-06	1.464E-05	1.192E-05	5.662E-07		
U-238	U-238	5.400E-05	4.229E-07	4.158E-07	4.018E-07	3.564E-07	2.531E-07	9.109E-08	5.840E-09	3.582E-14		
U-238	U-238	9.999E-01	2.006E-02	1.972E-02	1.906E-02	1.691E-02	1.200E-02	3.910E-03	1.835E-04	1.134E-09		
U-238	äDOSE(j)		2.006E-02	1.972E-02	1.906E-02	1.691E-02	1.201E-02	3.910E-03	1.835E-04	1.134E-09		
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THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Harshaw OU2 Model AF 10 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 6.64 seconds

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Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
Time = 3.000E+02	18
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Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

		Current	Base	Parameter
Menu	Parameter	Value#	Case*	Name
D-1	Th-230	5.480E-04	5.480E-04	DCF3(6)
D-1	U-234	2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(8)
D-1	U-238	2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D	2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(4,3)
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	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	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	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	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	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-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)

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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)

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#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.

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	3.000E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+02	1.000E+02	---	LCZFAQ
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)	3.000E+00	3.000E+00	---	T (3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T (4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T (5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T (6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T (7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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 : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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	not used	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	not used	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	not used	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 : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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	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

Maximum TDOSE(t): 3.772E-02 mrem/yr at t = 0.000E+00 years

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM TOTAL U.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.
U-234	4.648E-05	0.0012	2.564E-04	0.0068	0.000E+00	0.0000	8.417E-03	0.2232	0.000E+00	0.0000	0.000E+00	0.0000	1.104E-04	0.0029
U-235	3.896E-03	0.1033	1.099E-05	0.0003	0.000E+00	0.0000	3.659E-04	0.0097	0.000E+00	0.0000	0.000E+00	0.0000	4.802E-06	0.0001
U-238	1.628E-02	0.4317	2.293E-04	0.0061	0.000E+00	0.0000	7.992E-03	0.2119	0.000E+00	0.0000	0.000E+00	0.0000	1.048E-04	0.0028
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.022E-02	0.5362	4.967E-04	0.0132	0.000E+00	0.0000	1.678E-02	0.4448	0.000E+00	0.0000	0.000E+00	0.0000	2.201E-04	0.0058

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.
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	8.831E-03	0.2341
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	4.277E-03	0.1134
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	2.461E-02	0.6524
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.772E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	4.570E-05	0.0012	2.521E-04	0.0068	0.000E+00	0.0000	8.275E-03	0.2232	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-04	0.0029
U-235	3.830E-03	0.1033	1.081E-05	0.0003	0.000E+00	0.0000	3.597E-04	0.0097	0.000E+00	0.0000	0.000E+00	0.0000	4.724E-06	0.0001
U-238	1.600E-02	0.4317	2.254E-04	0.0061	0.000E+00	0.0000	7.857E-03	0.2119	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-04	0.0028
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.988E-02	0.5362	4.883E-04	0.0132	0.000E+00	0.0000	1.649E-02	0.4448	0.000E+00	0.0000	0.000E+00	0.0000	2.163E-04	0.0058

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	8.682E-03	0.2342
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	4.205E-03	0.1134
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	2.419E-02	0.6524
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.708E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM TOTAL U.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 = 3.000E+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.
U-234	4.419E-05	0.0012	2.436E-04	0.0068	0.000E+00	0.0000	7.997E-03	0.2232	0.000E+00	0.0000	0.000E+00	0.0000	1.049E-04	0.0029
U-235	3.701E-03	0.1033	1.045E-05	0.0003	0.000E+00	0.0000	3.477E-04	0.0097	0.000E+00	0.0000	0.000E+00	0.0000	4.574E-06	0.0001
U-238	1.547E-02	0.4317	2.178E-04	0.0061	0.000E+00	0.0000	7.593E-03	0.2119	0.000E+00	0.0000	0.000E+00	0.0000	9.959E-05	0.0028
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.921E-02	0.5362	4.718E-04	0.0132	0.000E+00	0.0000	1.594E-02	0.4448	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-04	0.0058

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.390E-03	0.2342
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	4.063E-03	0.1134
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	2.338E-02	0.6524
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.583E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 30 SM TOTAL U.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+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.
U-234	3.942E-05	0.0012	2.161E-04	0.0068	0.000E+00	0.0000	7.094E-03	0.2232	0.000E+00	0.0000	0.000E+00	0.0000	9.306E-05	0.0029
U-235	3.283E-03	0.1033	9.305E-06	0.0003	0.000E+00	0.0000	3.090E-04	0.0097	0.000E+00	0.0000	0.000E+00	0.0000	4.090E-06	0.0001
U-238	1.372E-02	0.4316	1.932E-04	0.0061	0.000E+00	0.0000	6.736E-03	0.2119	0.000E+00	0.0000	0.000E+00	0.0000	8.835E-05	0.0028
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.704E-02	0.5362	4.186E-04	0.0132	0.000E+00	0.0000	1.414E-02	0.4448	0.000E+00	0.0000	0.000E+00	0.0000	1.855E-04	0.0058

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+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.
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	7.443E-03	0.2342
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	3.606E-03	0.1134
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	2.074E-02	0.6524
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.179E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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 = 3.000E+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.
U-234	2.965E-05	0.0013	1.536E-04	0.0068	0.000E+00	0.0000	5.040E-03	0.2232	0.000E+00	0.0000	0.000E+00	0.0000	6.611E-05	0.0029
U-235	2.333E-03	0.1033	6.732E-06	0.0003	0.000E+00	0.0000	2.224E-04	0.0098	0.000E+00	0.0000	0.000E+00	0.0000	3.005E-06	0.0001
U-238	9.743E-03	0.4315	1.372E-04	0.0061	0.000E+00	0.0000	4.783E-03	0.2118	0.000E+00	0.0000	0.000E+00	0.0000	6.274E-05	0.0028
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.211E-02	0.5361	2.975E-04	0.0132	0.000E+00	0.0000	1.005E-02	0.4449	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-04	0.0058

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	5.289E-03	0.2342
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	2.565E-03	0.1136
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	1.473E-02	0.6522
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.258E-02	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.
U-234	2.197E-05	0.0025	4.656E-05	0.0054	0.000E+00	0.0000	1.534E-03	0.1770	0.000E+00	0.0000	0.000E+00	0.0000	2.005E-05	0.0023
U-235	7.093E-04	0.0819	2.377E-06	0.0003	0.000E+00	0.0000	7.645E-05	0.0088	0.000E+00	0.0000	0.000E+00	0.0000	1.146E-06	0.0001
U-238	2.940E-03	0.3393	4.141E-05	0.0048	0.000E+00	0.0000	1.444E-03	0.1666	0.000E+00	0.0000	0.000E+00	0.0000	1.894E-05	0.0022
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	3.671E-03	0.4236	9.035E-05	0.0104	0.000E+00	0.0000	3.054E-03	0.3525	0.000E+00	0.0000	0.000E+00	0.0000	4.013E-05	0.0046

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.072E-04	0.1047	0.000E+00	0.0000	0.000E+00	0.0000	2.530E-03	0.2919
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.061E-05	0.0047	0.000E+00	0.0000	0.000E+00	0.0000	8.299E-04	0.0958
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.619E-04	0.0995	0.000E+00	0.0000	0.000E+00	0.0000	5.306E-03	0.6123
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-03	0.2088	0.000E+00	0.0000	0.000E+00	0.0000	8.666E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	5.524E-05	0.0717	1.838E-06	0.0024	0.000E+00	0.0000	1.080E-04	0.1402	0.000E+00	0.0000	0.000E+00	0.0000	8.926E-07	0.0012
U-235	2.653E-05	0.0344	3.005E-07	0.0004	0.000E+00	0.0000	8.620E-06	0.0112	0.000E+00	0.0000	0.000E+00	0.0000	1.875E-07	0.0002
U-238	9.586E-05	0.1244	1.351E-06	0.0018	0.000E+00	0.0000	4.711E-05	0.0611	0.000E+00	0.0000	0.000E+00	0.0000	6.178E-07	0.0008
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.776E-04	0.2304	3.490E-06	0.0045	0.000E+00	0.0000	1.638E-04	0.2125	0.000E+00	0.0000	0.000E+00	0.0000	1.698E-06	0.0022

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.074E-04	0.2690	0.000E+00	0.0000	0.000E+00	0.0000	3.734E-04	0.4844
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.058E-05	0.0267	0.000E+00	0.0000	0.000E+00	0.0000	5.622E-05	0.0729
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.963E-04	0.2546	0.000E+00	0.0000	0.000E+00	0.0000	3.412E-04	0.4427
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.242E-04	0.5504	0.000E+00	0.0000	0.000E+00	0.0000	7.708E-04	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	1.360E-04	0.4668	3.173E-07	0.0011	0.000E+00	0.0000	1.463E-04	0.5024	0.000E+00	0.0000	0.000E+00	0.0000	4.610E-07	0.0016
U-235	1.239E-07	0.0004	8.105E-09	0.0000	0.000E+00	0.0000	2.227E-07	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-09	0.0000
U-238	2.245E-08	0.0001	6.124E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.846E-11	0.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.361E-04	0.4673	3.255E-07	0.0011	0.000E+00	0.0000	1.466E-04	0.5032	0.000E+00	0.0000	0.000E+00	0.0000	4.666E-07	0.0016

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.727E-06	0.0231	0.000E+00	0.0000	0.000E+00	0.0000	2.898E-04	0.9950
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-06	0.0036	0.000E+00	0.0000	0.000E+00	0.0000	1.410E-06	0.0048
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.198E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.060E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.781E-06	0.0267	0.000E+00	0.0000	0.000E+00	0.0000	2.913E-04	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	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	AAAAAAAAAA	
U-234	U-234	1.000E+00	1.806E-02	1.775E-02	1.716E-02	1.522E-02	1.081E-02	5.115E-03	5.282E-04	3.208E-09	
U-234	Th-230	1.000E+00	7.490E-08	2.127E-07	4.794E-07	1.344E-06	3.309E-06	6.651E-06	7.959E-06	7.557E-06	
U-234	Ra-226+D	1.000E+00	2.333E-09	1.657E-08	8.733E-08	7.522E-07	5.646E-06	4.233E-05	1.719E-04	4.257E-04	
U-234	Pb-210+D	1.000E+00	9.182E-12	1.174E-10	1.221E-09	2.802E-08	5.257E-07	8.757E-06	5.112E-05	1.414E-04	
U-234	Po-210	1.000E+00	2.245E-13	3.806E-12	5.060E-11	1.411E-09	2.855E-08	4.987E-07	4.357E-06	1.807E-05	
U-234	äDSR (j)		1.806E-02	1.775E-02	1.716E-02	1.522E-02	1.082E-02	5.174E-03	7.635E-04	5.927E-04	
U-235+D	U-235+D	1.000E+00	1.901E-01	1.869E-01	1.806E-01	1.602E-01	1.138E-01	3.608E-02	1.518E-03	9.416E-09	
U-235+D	Pa-231	1.000E+00	1.075E-06	2.422E-06	4.886E-06	1.269E-05	2.905E-05	6.179E-05	1.458E-04	1.317E-05	
U-235+D	Ac-227+D	1.000E+00	1.447E-07	1.031E-06	5.312E-06	4.128E-05	2.311E-04	7.425E-04	8.346E-04	4.948E-05	
U-235+D	äDSR (j)		1.901E-01	1.869E-01	1.806E-01	1.603E-01	1.140E-01	3.688E-02	2.499E-03	6.267E-05	
U-238	U-238	5.400E-05	8.753E-07	8.605E-07	8.316E-07	7.377E-07	5.238E-07	2.484E-07	2.570E-08	1.564E-13	
U-238+D	U-238+D	9.999E-01	5.032E-02	4.947E-02	4.780E-02	4.241E-02	3.011E-02	1.085E-02	6.973E-04	4.277E-09	
U-238+D	U-234	9.999E-01	2.553E-08	7.542E-08	1.702E-07	4.529E-07	9.343E-07	1.458E-06	4.502E-07	9.113E-12	
U-238+D	Th-230	9.999E-01	7.414E-14	4.797E-13	2.401E-12	1.950E-11	1.309E-10	6.904E-10	1.294E-09	1.270E-09	
U-238+D	Ra-226+D	9.999E-01	1.630E-15	2.488E-14	2.889E-13	7.254E-12	1.496E-10	3.054E-09	2.248E-08	6.850E-08	
U-238+D	Pb-210+D	9.999E-01	5.486E-18	1.432E-16	3.159E-15	2.091E-13	1.107E-11	6.072E-10	6.530E-09	2.359E-08	
U-238+D	Po-210	9.999E-01	1.243E-19	4.268E-18	1.220E-16	1.017E-14	5.932E-13	2.255E-10	7.979E-10	5.832E-09	
U-238+D	äDSR (j)		5.032E-02	4.947E-02	4.780E-02	4.241E-02	3.011E-02	1.085E-02	6.978E-04	1.035E-07	
iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	

The DSR includes contributions from associated (half-life > 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
U-234	1.384E+03	1.408E+03	1.457E+03	1.642E+03	2.311E+03	4.832E+03	3.274E+04	4.218E+04
U-235	1.315E+02	1.338E+02	1.384E+02	1.560E+02	2.193E+02	6.778E+02	1.001E+04	3.989E+05
U-238	4.968E+02	5.054E+02	5.230E+02	5.895E+02	8.302E+02	2.304E+03	3.583E+04	*3.361E+05
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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 = 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)
AAAAAAAA	AAAAAAAA	AAAAAAAAAAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA	AAAAAAAA
U-234	4.890E-01	0.000E+00	1.806E-02	1.384E+03	1.806E-02	1.384E+03
U-235	2.250E-02	0.000E+00	1.901E-01	1.315E+02	1.901E-01	1.315E+02
U-238	4.890E-01	0.000E+00	5.032E-02	4.968E+02	5.032E-02	4.968E+02
iiiiiiii	iiiiiiii	iiiiiiiiiiiiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	8.831E-03	8.682E-03	8.389E-03	7.442E-03	5.284E-03	2.501E-03	2.583E-04	1.569E-09		
U-234	U-238	9.999E-01	1.248E-08	3.688E-08	8.320E-08	2.215E-07	4.569E-07	7.127E-07	2.201E-07	4.456E-12		
U-234	äDOSE(j)		8.831E-03	8.682E-03	8.389E-03	7.442E-03	5.285E-03	2.502E-03	2.585E-04	1.573E-09		
Th-230	U-234	1.000E+00	3.663E-08	1.040E-07	2.344E-07	6.570E-07	1.618E-06	3.252E-06	3.892E-06	3.696E-06		
Th-230	U-238	9.999E-01	3.626E-14	2.346E-13	1.174E-12	9.535E-12	6.402E-11	3.376E-10	6.326E-10	6.211E-10		
Th-230	äDOSE(j)		3.663E-08	1.040E-07	2.344E-07	6.570E-07	1.618E-06	3.253E-06	3.893E-06	3.696E-06		
Ra-226	U-234	1.000E+00	1.141E-09	8.104E-09	4.270E-08	3.678E-07	2.761E-06	2.070E-05	8.404E-05	2.082E-04		
Ra-226	U-238	9.999E-01	7.973E-16	1.216E-14	1.413E-13	3.547E-12	7.316E-11	1.493E-09	1.099E-08	3.350E-08		
Ra-226	äDOSE(j)		1.141E-09	8.104E-09	4.270E-08	3.678E-07	2.761E-06	2.070E-05	8.405E-05	2.082E-04		
Pb-210	U-234	1.000E+00	4.490E-12	5.743E-11	5.972E-10	1.370E-08	2.571E-07	4.282E-06	2.500E-05	6.915E-05		
Pb-210	U-238	9.999E-01	2.683E-18	7.004E-17	1.545E-15	1.022E-13	5.411E-12	2.969E-10	3.193E-09	1.153E-08		
Pb-210	äDOSE(j)		4.490E-12	5.743E-11	5.972E-10	1.370E-08	2.571E-07	4.282E-06	2.500E-05	6.916E-05		
Po-210	U-234	1.000E+00	1.098E-13	1.861E-12	2.475E-11	6.898E-10	1.396E-08	2.439E-07	2.130E-06	8.835E-06		
Po-210	U-238	9.999E-01	6.079E-20	2.087E-18	5.964E-17	4.972E-15	2.901E-13	1.103E-10	3.901E-10	2.852E-09		
Po-210	äDOSE(j)		1.098E-13	1.861E-12	2.475E-11	6.898E-10	1.396E-08	2.440E-07	2.131E-06	8.838E-06		
U-235	U-235	1.000E+00	4.277E-03	4.205E-03	4.063E-03	3.604E-03	2.560E-03	8.118E-04	3.416E-05	2.119E-10		
Pa-231	U-235	1.000E+00	2.419E-08	5.449E-08	1.099E-07	2.855E-07	6.537E-07	1.390E-06	3.281E-06	2.964E-07		
Ac-227	U-235	1.000E+00	3.255E-09	2.320E-08	1.195E-07	9.287E-07	5.199E-06	1.671E-05	1.878E-05	1.113E-06		
U-238	U-238	5.400E-05	4.280E-07	4.208E-07	4.066E-07	3.607E-07	2.562E-07	1.215E-07	1.257E-08	7.650E-14		
U-238	U-238	9.999E-01	2.461E-02	2.419E-02	2.338E-02	2.074E-02	1.473E-02	5.305E-03	3.410E-04	2.092E-09		
U-238	äDOSE(j)		2.461E-02	2.419E-02	2.338E-02	2.074E-02	1.473E-02	5.305E-03	3.410E-04	2.092E-09		
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THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Harshaw OU2 Model AF 30 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 7.14 seconds

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Total Dose Components	
Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
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Summary : RESRAD Harshaw OU2 Model AF 100 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

		Current	Base	Parameter
Menu	Parameter	Value#	Case*	Name
D-1	Th-230	5.480E-04	5.480E-04	DCF3(6)
D-1	U-234	2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(8)
D-1	U-238	2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D	2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(4,3)
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	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	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	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	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	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-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)

Summary : RESRAD Harshaw OU2 Model AF 100 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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)

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#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 Harshaw OU2 Model AF 100 SM Total U

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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)	1.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	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	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	not used	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	not used	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	not used	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

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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	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 Harshaw OU2 Model AF 100 SM Total U

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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.
U-234	5.623E-05	0.0013	2.918E-04	0.0068	0.000E+00	0.0000	8.418E-03	0.1962	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-04	0.0086
U-235	4.768E-03	0.1111	1.251E-05	0.0003	0.000E+00	0.0000	3.659E-04	0.0085	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-05	0.0004
U-238	2.001E-02	0.4663	2.609E-04	0.0061	0.000E+00	0.0000	7.993E-03	0.1863	0.000E+00	0.0000	0.000E+00	0.0000	3.495E-04	0.0081
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.483E-02	0.5787	5.651E-04	0.0132	0.000E+00	0.0000	1.678E-02	0.3910	0.000E+00	0.0000	0.000E+00	0.0000	7.335E-04	0.0171

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.
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	9.134E-03	0.2129
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	5.163E-03	0.1203
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	2.861E-02	0.6668
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.290E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Total U

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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.
U-234	5.528E-05	0.0013	2.868E-04	0.0068	0.000E+00	0.0000	8.276E-03	0.1962	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-04	0.0086
U-235	4.688E-03	0.1111	1.230E-05	0.0003	0.000E+00	0.0000	3.598E-04	0.0085	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-05	0.0004
U-238	1.967E-02	0.4663	2.565E-04	0.0061	0.000E+00	0.0000	7.858E-03	0.1863	0.000E+00	0.0000	0.000E+00	0.0000	3.435E-04	0.0081
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.441E-02	0.5787	5.556E-04	0.0132	0.000E+00	0.0000	1.649E-02	0.3910	0.000E+00	0.0000	0.000E+00	0.0000	7.211E-04	0.0171

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.
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	8.980E-03	0.2129
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	5.075E-03	0.1203
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	2.812E-02	0.6668
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.218E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Total U

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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 = 3.000E+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.
U-234	5.345E-05	0.0013	2.772E-04	0.0068	0.000E+00	0.0000	7.997E-03	0.1962	0.000E+00	0.0000	0.000E+00	0.0000	3.496E-04	0.0086
U-235	4.530E-03	0.1111	1.189E-05	0.0003	0.000E+00	0.0000	3.477E-04	0.0085	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-05	0.0004
U-238	1.900E-02	0.4662	2.478E-04	0.0061	0.000E+00	0.0000	7.593E-03	0.1863	0.000E+00	0.0000	0.000E+00	0.0000	3.320E-04	0.0081
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.359E-02	0.5787	5.369E-04	0.0132	0.000E+00	0.0000	1.594E-02	0.3910	0.000E+00	0.0000	0.000E+00	0.0000	6.969E-04	0.0171

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	8.677E-03	0.2129
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	4.905E-03	0.1203
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	2.718E-02	0.6668
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.076E-02	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+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.
U-234	4.769E-05	0.0013	2.459E-04	0.0068	0.000E+00	0.0000	7.095E-03	0.1962	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-04	0.0086
U-235	4.019E-03	0.1111	1.059E-05	0.0003	0.000E+00	0.0000	3.090E-04	0.0085	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-05	0.0004
U-238	1.686E-02	0.4662	2.198E-04	0.0061	0.000E+00	0.0000	6.736E-03	0.1863	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-04	0.0081
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.092E-02	0.5787	4.763E-04	0.0132	0.000E+00	0.0000	1.414E-02	0.3910	0.000E+00	0.0000	0.000E+00	0.0000	6.183E-04	0.0171

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+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.
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	7.698E-03	0.2129
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	4.352E-03	0.1204
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	2.411E-02	0.6667
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.616E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Total U

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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 = 3.000E+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.
U-234	3.591E-05	0.0014	1.747E-04	0.0068	0.000E+00	0.0000	5.040E-03	0.1962	0.000E+00	0.0000	0.000E+00	0.0000	2.204E-04	0.0086
U-235	2.856E-03	0.1112	7.660E-06	0.0003	0.000E+00	0.0000	2.224E-04	0.0087	0.000E+00	0.0000	0.000E+00	0.0000	1.002E-05	0.0004
U-238	1.197E-02	0.4660	1.561E-04	0.0061	0.000E+00	0.0000	4.784E-03	0.1862	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-04	0.0081
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.486E-02	0.5786	3.385E-04	0.0132	0.000E+00	0.0000	1.005E-02	0.3911	0.000E+00	0.0000	0.000E+00	0.0000	4.395E-04	0.0171

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	5.471E-03	0.2130
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	3.096E-03	0.1205
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	1.712E-02	0.6665
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.569E-02	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.
U-234	2.694E-05	0.0019	5.298E-05	0.0038	0.000E+00	0.0000	1.534E-03	0.1109	0.000E+00	0.0000	0.000E+00	0.0000	6.683E-05	0.0048
U-235	8.682E-04	0.0628	2.705E-06	0.0002	0.000E+00	0.0000	7.645E-05	0.0055	0.000E+00	0.0000	0.000E+00	0.0000	3.819E-06	0.0003
U-238	3.612E-03	0.2612	4.712E-05	0.0034	0.000E+00	0.0000	1.444E-03	0.1044	0.000E+00	0.0000	0.000E+00	0.0000	6.312E-05	0.0046
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	4.508E-03	0.3259	1.028E-04	0.0074	0.000E+00	0.0000	3.054E-03	0.2208	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-04	0.0097

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.024E-03	0.2186	0.000E+00	0.0000	0.000E+00	0.0000	4.705E-03	0.3402
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.354E-04	0.0098	0.000E+00	0.0000	0.000E+00	0.0000	1.087E-03	0.0786
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.873E-03	0.2077	0.000E+00	0.0000	0.000E+00	0.0000	8.039E-03	0.5813
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.032E-03	0.4362	0.000E+00	0.0000	0.000E+00	0.0000	1.383E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 100 SM Total U

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	6.826E-05	0.0378	2.091E-06	0.0012	0.000E+00	0.0000	1.080E-04	0.0598	0.000E+00	0.0000	0.000E+00	0.0000	2.975E-06	0.0016
U-235	3.248E-05	0.0180	3.419E-07	0.0002	0.000E+00	0.0000	8.620E-06	0.0048	0.000E+00	0.0000	0.000E+00	0.0000	6.249E-07	0.0003
U-238	1.178E-04	0.0652	1.537E-06	0.0009	0.000E+00	0.0000	4.711E-05	0.0261	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-06	0.0011
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.185E-04	0.1210	3.971E-06	0.0022	0.000E+00	0.0000	1.638E-04	0.0907	0.000E+00	0.0000	0.000E+00	0.0000	5.660E-06	0.0031

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.912E-04	0.3827	0.000E+00	0.0000	0.000E+00	0.0000	8.726E-04	0.4832
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.860E-05	0.0380	0.000E+00	0.0000	0.000E+00	0.0000	1.107E-04	0.0613
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.543E-04	0.3623	0.000E+00	0.0000	0.000E+00	0.0000	8.228E-04	0.4556
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.414E-03	0.7830	0.000E+00	0.0000	0.000E+00	0.0000	1.806E-03	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.
U-234	1.681E-04	0.4904	3.610E-07	0.0011	0.000E+00	0.0000	1.463E-04	0.4270	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-06	0.0045
U-235	1.517E-07	0.0004	9.223E-09	0.0000	0.000E+00	0.0000	2.227E-07	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-08	0.0001
U-238	2.775E-08	0.0001	6.968E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-10	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.682E-04	0.4909	3.703E-07	0.0011	0.000E+00	0.0000	1.466E-04	0.4278	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-06	0.0045

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.242E-05	0.0654	0.000E+00	0.0000	0.000E+00	0.0000	3.387E-04	0.9884
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.500E-06	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	3.901E-06	0.0114
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.399E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.588E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.594E-05	0.0757	0.000E+00	0.0000	0.000E+00	0.0000	3.427E-04	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	U-234	1.000E+00	1.868E-02	1.836E-02	1.774E-02	1.574E-02	1.118E-02	9.556E-03	1.517E-03	9.170E-09
U-234	Th-230	1.000E+00	8.059E-08	2.296E-07	5.182E-07	1.454E-06	3.581E-06	7.208E-06	8.682E-06	8.251E-06
U-234	Ra-226+D	1.000E+00	2.708E-09	1.918E-08	1.009E-07	8.689E-07	6.520E-06	4.888E-05	1.986E-04	4.922E-04
U-234	Pb-210+D	1.000E+00	9.234E-12	1.182E-10	1.230E-09	2.824E-08	5.298E-07	8.832E-06	5.259E-05	1.498E-04
U-234	Po-210	1.000E+00	2.295E-13	3.927E-12	5.259E-11	1.473E-09	2.988E-08	5.439E-07	8.005E-06	4.241E-05
U-234	äDSR(j)		1.868E-02	1.836E-02	1.775E-02	1.574E-02	1.119E-02	9.622E-03	1.784E-03	6.927E-04
U-235+D	U-235+D	1.000E+00	2.295E-01	2.256E-01	2.180E-01	1.934E-01	1.373E-01	4.728E-02	2.681E-03	1.649E-08
U-235+D	Pa-231	1.000E+00	1.392E-06	3.365E-06	7.039E-06	1.867E-05	4.308E-05	1.200E-04	4.415E-04	4.240E-05
U-235+D	Ac-227+D	1.000E+00	1.594E-07	1.132E-06	5.826E-06	4.523E-05	2.531E-04	8.952E-04	1.796E-03	1.310E-04
U-235+D	äDSR(j)		2.295E-01	2.256E-01	2.180E-01	1.934E-01	1.376E-01	4.829E-02	4.918E-03	1.734E-04
U-238	U-238	5.400E-05	9.047E-07	8.894E-07	8.595E-07	7.624E-07	5.414E-07	4.644E-07	7.383E-08	4.473E-13
U-238+D	U-238+D	9.999E-01	5.850E-02	5.751E-02	5.558E-02	4.930E-02	3.501E-02	1.644E-02	1.681E-03	1.023E-08
U-238+D	U-234	9.999E-01	2.640E-08	7.801E-08	1.760E-07	4.685E-07	9.664E-07	2.723E-06	1.292E-06	2.604E-11
U-238+D	Th-230	9.999E-01	7.950E-14	5.168E-13	2.593E-12	2.109E-11	1.416E-10	7.498E-10	1.433E-09	1.414E-09
U-238+D	Ra-226+D	9.999E-01	1.895E-15	2.881E-14	3.340E-13	8.380E-12	1.728E-10	3.539E-09	2.600E-08	7.942E-08
U-238+D	Pb-210+D	9.999E-01	5.516E-18	1.441E-16	3.181E-15	2.106E-13	1.115E-11	7.524E-10	6.894E-09	2.705E-08
U-238+D	Po-210	9.999E-01	1.268E-19	4.391E-18	1.265E-16	1.061E-14	6.205E-13	6.822E-10	1.837E-09	1.658E-08
U-238+D	äDSR(j)		5.850E-02	5.751E-02	5.558E-02	4.930E-02	3.501E-02	1.644E-02	1.682E-03	1.347E-07

The DSR includes contributions from associated (half-life ≥ 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.338E+03	1.361E+03	1.409E+03	1.588E+03	2.235E+03	2.598E+03	1.401E+04	3.609E+04
U-235	1.090E+02	1.108E+02	1.147E+02	1.292E+02	1.817E+02	5.177E+02	5.083E+03	1.442E+05
U-238	4.273E+02	4.347E+02	4.498E+02	5.071E+02	7.141E+02	1.521E+03	1.486E+04	*3.361E+05

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 = 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)
U-234	4.890E-01	0.000E+00	1.868E-02	1.338E+03	1.868E-02	1.338E+03
U-235	2.250E-02	0.000E+00	2.295E-01	1.090E+02	2.295E-01	1.090E+02
U-238	4.890E-01	0.000E+00	5.850E-02	4.273E+02	5.850E-02	4.273E+02

Summary : RESRAD Harshaw OU2 Model AF 100 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	9.134E-03	8.979E-03	8.677E-03	7.697E-03	5.466E-03	4.673E-03	7.416E-04	4.484E-09		
U-234	U-238	9.999E-01	1.291E-08	3.815E-08	8.606E-08	2.291E-07	4.726E-07	1.331E-06	6.320E-07	1.274E-11		
U-234	äDOSE(j)		9.134E-03	8.979E-03	8.677E-03	7.697E-03	5.466E-03	4.674E-03	7.422E-04	4.497E-09		
Th-230	U-234	1.000E+00	3.941E-08	1.123E-07	2.534E-07	7.108E-07	1.751E-06	3.525E-06	4.246E-06	4.035E-06		
Th-230	U-238	9.999E-01	3.888E-14	2.527E-13	1.268E-12	1.031E-11	6.926E-11	3.667E-10	7.008E-10	6.915E-10		
Th-230	äDOSE(j)		3.941E-08	1.123E-07	2.534E-07	7.108E-07	1.751E-06	3.525E-06	4.246E-06	4.035E-06		
Ra-226	U-234	1.000E+00	1.324E-09	9.378E-09	4.936E-08	4.249E-07	3.188E-06	2.390E-05	9.710E-05	2.407E-04		
Ra-226	U-238	9.999E-01	9.266E-16	1.409E-14	1.633E-13	4.098E-12	8.449E-11	1.731E-09	1.272E-08	3.884E-08		
Ra-226	äDOSE(j)		1.324E-09	9.378E-09	4.936E-08	4.249E-07	3.189E-06	2.390E-05	9.711E-05	2.407E-04		
Pb-210	U-234	1.000E+00	4.515E-12	5.781E-11	6.015E-10	1.381E-08	2.591E-07	4.319E-06	2.572E-05	7.325E-05		
Pb-210	U-238	9.999E-01	2.697E-18	7.048E-17	1.555E-15	1.030E-13	5.453E-12	3.679E-10	3.371E-09	1.323E-08		
Pb-210	äDOSE(j)		4.515E-12	5.781E-11	6.015E-10	1.381E-08	2.591E-07	4.319E-06	2.572E-05	7.327E-05		
Po-210	U-234	1.000E+00	1.122E-13	1.920E-12	2.572E-11	7.204E-10	1.461E-08	2.660E-07	3.914E-06	2.074E-05		
Po-210	U-238	9.999E-01	6.198E-20	2.147E-18	6.185E-17	5.189E-15	3.034E-13	3.336E-10	8.984E-10	8.108E-09		
Po-210	äDOSE(j)		1.122E-13	1.920E-12	2.572E-11	7.204E-10	1.461E-08	2.663E-07	3.915E-06	2.075E-05		
U-235	U-235	1.000E+00	5.163E-03	5.075E-03	4.904E-03	4.351E-03	3.089E-03	1.064E-03	6.032E-05	3.711E-10		
Pa-231	U-235	1.000E+00	3.133E-08	7.571E-08	1.584E-07	4.202E-07	9.694E-07	2.701E-06	9.934E-06	9.539E-07		
Ac-227	U-235	1.000E+00	3.587E-09	2.548E-08	1.311E-07	1.018E-06	5.696E-06	2.014E-05	4.041E-05	2.947E-06		
U-238	U-238	5.400E-05	4.424E-07	4.349E-07	4.203E-07	3.728E-07	2.648E-07	2.271E-07	3.610E-08	2.187E-13		
U-238	U-238	9.999E-01	2.861E-02	2.812E-02	2.718E-02	2.411E-02	1.712E-02	8.038E-03	8.221E-04	5.004E-09		
U-238	äDOSE(j)		2.861E-02	2.812E-02	2.718E-02	2.411E-02	1.712E-02	8.038E-03	8.221E-04	5.004E-09		
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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08	
U-234	U-238	9.999E-01		0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11	
U-234	äS(j):			4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08	
Th-230	U-234	1.000E+00		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04	
Th-230	U-238	9.999E-01		0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08	
Th-230	äS(j):			0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04	
Ra-226	U-234	1.000E+00		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05	
Ra-226	U-238	9.999E-01		0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09	
Ra-226	äS(j):			0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05	
Pb-210	U-234	1.000E+00		0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05	
Pb-210	U-238	9.999E-01		0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09	
Pb-210	äS(j):			0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05	
Po-210	U-234	1.000E+00		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05	
Po-210	U-238	9.999E-01		0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09	
Po-210	äS(j):			0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05	
U-235	U-235	1.000E+00		2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10	
Pa-231	U-235	1.000E+00		0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07	
Ac-227	U-235	1.000E+00		0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07	
U-238	U-238	5.400E-05		2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13	
U-238	U-238	9.999E-01		4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08	
U-238	äS(j):			4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08	
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 7.23 seconds

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Dose Conversion Factor (and Related) Parameter Summary ...	2
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Total Dose Components	
Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
Time = 3.000E+02	18
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Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OU2 Model AF 300 SM Total U

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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)	3.000E+02	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsat. zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsat. zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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 : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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	not used	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	not used	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	not used	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 : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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	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 Harshaw OU2 Model AF 300 SM Total U

File : C:\RESRAD_FAMILY\ONSITE\7.2\USERFILES\HARSHAW\FINAL AFS\RI MODEL OU2 300 SM TOTAL U.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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	5.987E-05	0.0013	3.279E-04	0.0071	0.000E+00	0.0000	8.418E-03	0.1815	0.000E+00	0.0000	0.000E+00	0.0000	1.104E-03	0.0238
U-235	5.110E-03	0.1102	1.406E-05	0.0003	0.000E+00	0.0000	3.659E-04	0.0079	0.000E+00	0.0000	0.000E+00	0.0000	4.802E-05	0.0010
U-238	2.160E-02	0.4656	2.932E-04	0.0063	0.000E+00	0.0000	7.993E-03	0.1723	0.000E+00	0.0000	0.000E+00	0.0000	1.048E-03	0.0226
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.677E-02	0.5771	6.352E-04	0.0137	0.000E+00	0.0000	1.678E-02	0.3617	0.000E+00	0.0000	0.000E+00	0.0000	2.201E-03	0.0474

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	9.910E-03	0.2137
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	5.538E-03	0.1194
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	3.093E-02	0.6669
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.638E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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.
U-234	5.886E-05	0.0013	3.224E-04	0.0071	0.000E+00	0.0000	8.276E-03	0.1815	0.000E+00	0.0000	0.000E+00	0.0000	1.085E-03	0.0238
U-235	5.024E-03	0.1102	1.383E-05	0.0003	0.000E+00	0.0000	3.598E-04	0.0079	0.000E+00	0.0000	0.000E+00	0.0000	4.724E-05	0.0010
U-238	2.123E-02	0.4656	2.883E-04	0.0063	0.000E+00	0.0000	7.858E-03	0.1724	0.000E+00	0.0000	0.000E+00	0.0000	1.031E-03	0.0226
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.631E-02	0.5771	6.244E-04	0.0137	0.000E+00	0.0000	1.649E-02	0.3618	0.000E+00	0.0000	0.000E+00	0.0000	2.163E-03	0.0474

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.
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	9.743E-03	0.2137
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	5.444E-03	0.1194
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	3.041E-02	0.6669
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.559E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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 = 3.000E+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.
U-234	5.691E-05	0.0013	3.115E-04	0.0071	0.000E+00	0.0000	7.998E-03	0.1815	0.000E+00	0.0000	0.000E+00	0.0000	1.049E-03	0.0238
U-235	4.855E-03	0.1102	1.337E-05	0.0003	0.000E+00	0.0000	3.477E-04	0.0079	0.000E+00	0.0000	0.000E+00	0.0000	4.574E-05	0.0010
U-238	2.051E-02	0.4656	2.786E-04	0.0063	0.000E+00	0.0000	7.594E-03	0.1723	0.000E+00	0.0000	0.000E+00	0.0000	9.959E-04	0.0226
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.543E-02	0.5771	6.035E-04	0.0137	0.000E+00	0.0000	1.594E-02	0.3618	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-03	0.0474

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	9.415E-03	0.2137
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	5.262E-03	0.1194
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	2.938E-02	0.6669
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.406E-02	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+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.
U-234	5.079E-05	0.0013	2.764E-04	0.0071	0.000E+00	0.0000	7.095E-03	0.1815	0.000E+00	0.0000	0.000E+00	0.0000	9.306E-04	0.0238
U-235	4.307E-03	0.1102	1.190E-05	0.0003	0.000E+00	0.0000	3.090E-04	0.0079	0.000E+00	0.0000	0.000E+00	0.0000	4.090E-05	0.0010
U-238	1.820E-02	0.4656	2.471E-04	0.0063	0.000E+00	0.0000	6.736E-03	0.1723	0.000E+00	0.0000	0.000E+00	0.0000	8.835E-04	0.0226
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.256E-02	0.5771	5.354E-04	0.0137	0.000E+00	0.0000	1.414E-02	0.3618	0.000E+00	0.0000	0.000E+00	0.0000	1.855E-03	0.0475

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+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.
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	8.353E-03	0.2137
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	4.669E-03	0.1195
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	2.606E-02	0.6669
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.909E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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 = 3.000E+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.
U-234	3.828E-05	0.0014	1.964E-04	0.0071	0.000E+00	0.0000	5.040E-03	0.1815	0.000E+00	0.0000	0.000E+00	0.0000	6.611E-04	0.0238
U-235	3.061E-03	0.1102	8.610E-06	0.0003	0.000E+00	0.0000	2.224E-04	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	3.005E-05	0.0011
U-238	1.292E-02	0.4654	1.755E-04	0.0063	0.000E+00	0.0000	4.784E-03	0.1723	0.000E+00	0.0000	0.000E+00	0.0000	6.274E-04	0.0226
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.602E-02	0.5770	3.805E-04	0.0137	0.000E+00	0.0000	1.005E-02	0.3618	0.000E+00	0.0000	0.000E+00	0.0000	1.319E-03	0.0475

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	5.936E-03	0.2138
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	3.322E-03	0.1196
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-02	0.6666
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	2.777E-02	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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	2.900E-05	0.0011	5.955E-05	0.0022	0.000E+00	0.0000	1.534E-03	0.0578	0.000E+00	0.0000	0.000E+00	0.0000	2.005E-04	0.0076
U-235	9.305E-04	0.0351	3.040E-06	0.0001	0.000E+00	0.0000	7.646E-05	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	1.146E-05	0.0004
U-238	3.899E-03	0.1470	5.297E-05	0.0020	0.000E+00	0.0000	1.444E-03	0.0544	0.000E+00	0.0000	0.000E+00	0.0000	1.894E-04	0.0071
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	4.859E-03	0.1832	1.156E-04	0.0044	0.000E+00	0.0000	3.055E-03	0.1151	0.000E+00	0.0000	0.000E+00	0.0000	4.013E-04	0.0151

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.072E-03	0.3420	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-02	0.4107
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.061E-04	0.0153	0.000E+00	0.0000	0.000E+00	0.0000	1.428E-03	0.0538
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.619E-03	0.3249	0.000E+00	0.0000	0.000E+00	0.0000	1.420E-02	0.5355
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.810E-02	0.6822	0.000E+00	0.0000	0.000E+00	0.0000	2.653E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	7.396E-05	0.0159	2.351E-06	0.0005	0.000E+00	0.0000	1.080E-04	0.0232	0.000E+00	0.0000	0.000E+00	0.0000	8.926E-06	0.0019
U-235	3.482E-05	0.0075	3.843E-07	0.0001	0.000E+00	0.0000	8.621E-06	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	1.875E-06	0.0004
U-238	1.272E-04	0.0273	1.728E-06	0.0004	0.000E+00	0.0000	4.711E-05	0.0101	0.000E+00	0.0000	0.000E+00	0.0000	6.178E-06	0.0013
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.359E-04	0.0506	4.463E-06	0.0010	0.000E+00	0.0000	1.638E-04	0.0351	0.000E+00	0.0000	0.000E+00	0.0000	1.698E-05	0.0036

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.074E-03	0.4447	0.000E+00	0.0000	0.000E+00	0.0000	2.267E-03	0.4861
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.058E-04	0.0441	0.000E+00	0.0000	0.000E+00	0.0000	2.515E-04	0.0539
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.963E-03	0.4209	0.000E+00	0.0000	0.000E+00	0.0000	2.145E-03	0.4600
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.242E-03	0.9097	0.000E+00	0.0000	0.000E+00	0.0000	4.663E-03	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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.
U-234	1.821E-04	0.4423	4.058E-07	0.0010	0.000E+00	0.0000	1.463E-04	0.3554	0.000E+00	0.0000	0.000E+00	0.0000	4.610E-06	0.0112
U-235	1.632E-07	0.0004	1.037E-08	0.0000	0.000E+00	0.0000	2.227E-07	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	5.455E-08	0.0001
U-238	3.006E-08	0.0001	7.832E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.846E-10	0.0000
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.823E-04	0.4427	4.163E-07	0.0010	0.000E+00	0.0000	1.466E-04	0.3560	0.000E+00	0.0000	0.000E+00	0.0000	4.666E-06	0.0113

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.727E-05	0.1634	0.000E+00	0.0000	0.000E+00	0.0000	4.007E-04	0.9732
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-05	0.0255	0.000E+00	0.0000	0.000E+00	0.0000	1.095E-05	0.0266
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.198E-08	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.672E-08	0.0002
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.781E-05	0.1889	0.000E+00	0.0000	0.000E+00	0.0000	4.118E-04	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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03				
U-234	U-234	1.000E+00	2.027E-02	1.992E-02	1.925E-02	1.708E-02	1.213E-02	2.221E-02	4.339E-03	2.619E-08	
U-234	Th-230	1.000E+00	9.468E-08	2.716E-07	6.145E-07	1.726E-06	4.253E-06	8.592E-06	1.050E-05	9.998E-06	
U-234	Ra-226+D	1.000E+00	2.875E-09	2.035E-08	1.070E-07	9.212E-07	6.912E-06	5.182E-05	2.109E-04	5.239E-04	
U-234	Pb-210+D	1.000E+00	9.379E-12	1.204E-10	1.255E-09	2.883E-08	5.412E-07	9.041E-06	5.674E-05	1.737E-04	
U-234	Po-210	1.000E+00	2.436E-13	4.270E-12	5.824E-11	1.652E-09	3.364E-08	6.731E-07	1.843E-05	1.120E-04	
U-234	äDSR(j)		2.027E-02	1.992E-02	1.925E-02	1.708E-02	1.214E-02	2.228E-02	4.636E-03	8.195E-04	
U-235+D	U-235+D	1.000E+00	2.461E-01	2.420E-01	2.338E-01	2.074E-01	1.473E-01	6.198E-02	5.439E-03	3.318E-08	
U-235+D	Pa-231	1.000E+00	2.040E-06	5.288E-06	1.143E-05	3.088E-05	7.170E-05	2.679E-04	1.277E-03	1.256E-04	
U-235+D	Ac-227+D	1.000E+00	1.733E-07	1.227E-06	6.307E-06	4.894E-05	2.739E-04	1.202E-03	4.462E-03	3.611E-04	
U-235+D	äDSR(j)		2.461E-01	2.420E-01	2.338E-01	2.075E-01	1.476E-01	6.345E-02	1.118E-02	4.866E-04	
U-238	U-238	5.400E-05	9.816E-07	9.650E-07	9.326E-07	8.273E-07	5.875E-07	1.080E-06	2.113E-07	1.278E-12	
U-238+D	U-238+D	9.999E-01	6.325E-02	6.218E-02	6.009E-02	5.330E-02	3.785E-02	2.904E-02	4.382E-03	2.656E-08	
U-238+D	U-234	9.999E-01	2.864E-08	8.464E-08	1.909E-07	5.083E-07	1.049E-06	6.328E-06	3.698E-06	7.440E-11	
U-238+D	Th-230	9.999E-01	9.278E-14	6.088E-13	3.069E-12	2.502E-11	1.682E-10	8.981E-10	1.792E-09	1.787E-09	
U-238+D	Ra-226+D	9.999E-01	2.014E-15	3.058E-14	3.543E-13	8.885E-12	1.832E-10	3.791E-09	2.769E-08	8.514E-08	
U-238+D	Pb-210+D	9.999E-01	5.598E-18	1.466E-16	3.243E-15	2.150E-13	1.139E-11	1.167E-09	7.952E-09	3.693E-08	
U-238+D	Po-210	9.999E-01	1.337E-19	4.743E-18	1.394E-16	1.187E-14	6.982E-13	1.987E-09	4.872E-09	4.729E-08	
U-238+D	äDSR(j)		6.325E-02	6.218E-02	6.009E-02	5.330E-02	3.785E-02	2.905E-02	4.386E-03	1.978E-07	

The DSR includes contributions from associated (half-life ≥ 30 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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
U-234	1.234E+03	1.255E+03	1.298E+03	1.464E+03	2.060E+03	1.122E+03	5.393E+03	3.051E+04
U-235	1.016E+02	1.033E+02	1.069E+02	1.205E+02	1.693E+02	3.940E+02	2.237E+03	5.137E+04
U-238	3.953E+02	4.021E+02	4.161E+02	4.690E+02	6.605E+02	8.606E+02	5.699E+03	*3.361E+05

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 = 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)
U-234	4.890E-01	185.1 ± 0.4	3.091E-02	8.089E+02	2.027E-02	1.234E+03
U-235	2.250E-02	0.000E+00	2.461E-01	1.016E+02	2.461E-01	1.016E+02
U-238	4.890E-01	0.000E+00	6.325E-02	3.953E+02	6.325E-02	3.953E+02

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	9.910E-03	9.742E-03	9.415E-03	8.351E-03	5.930E-03	1.086E-02	2.122E-03	1.281E-08	
U-234	U-238	9.999E-01	1.401E-08	4.139E-08	9.337E-08	2.486E-07	5.127E-07	3.095E-06	1.808E-06	3.638E-11	
U-234	äDOSE(j)		9.910E-03	9.742E-03	9.415E-03	8.352E-03	5.931E-03	1.086E-02	2.124E-03	1.285E-08	
Th-230	U-234	1.000E+00	4.630E-08	1.328E-07	3.005E-07	8.439E-07	2.080E-06	4.202E-06	5.135E-06	4.889E-06	
Th-230	U-238	9.999E-01	4.537E-14	2.977E-13	1.501E-12	1.223E-11	8.225E-11	4.392E-10	8.765E-10	8.739E-10	
Th-230	äDOSE(j)		4.630E-08	1.328E-07	3.005E-07	8.439E-07	2.080E-06	4.202E-06	5.136E-06	4.890E-06	
Ra-226	U-234	1.000E+00	1.406E-09	9.949E-09	5.234E-08	4.505E-07	3.380E-06	2.534E-05	1.031E-04	2.562E-04	
Ra-226	U-238	9.999E-01	9.846E-16	1.495E-14	1.732E-13	4.345E-12	8.957E-11	1.854E-09	1.354E-08	4.163E-08	
Ra-226	äDOSE(j)		1.406E-09	9.949E-09	5.234E-08	4.505E-07	3.380E-06	2.534E-05	1.031E-04	2.562E-04	
Pb-210	U-234	1.000E+00	4.586E-12	5.886E-11	6.135E-10	1.410E-08	2.646E-07	4.421E-06	2.775E-05	8.493E-05	
Pb-210	U-238	9.999E-01	2.737E-18	7.171E-17	1.586E-15	1.052E-13	5.569E-12	5.706E-10	3.889E-09	1.806E-08	
Pb-210	äDOSE(j)		4.586E-12	5.886E-11	6.135E-10	1.410E-08	2.646E-07	4.422E-06	2.775E-05	8.495E-05	
Po-210	U-234	1.000E+00	1.191E-13	2.088E-12	2.848E-11	8.078E-10	1.645E-08	3.291E-07	9.010E-06	5.475E-05	
Po-210	U-238	9.999E-01	6.537E-20	2.320E-18	6.817E-17	5.806E-15	3.414E-13	9.716E-10	2.382E-09	2.313E-08	
Po-210	äDOSE(j)		1.191E-13	2.088E-12	2.848E-11	8.078E-10	1.645E-08	3.301E-07	9.013E-06	5.477E-05	
U-235	U-235	1.000E+00	5.538E-03	5.444E-03	5.261E-03	4.667E-03	3.314E-03	1.395E-03	1.224E-04	7.466E-10	
Pa-231	U-235	1.000E+00	4.590E-08	1.190E-07	2.572E-07	6.949E-07	1.613E-06	6.028E-06	2.872E-05	2.825E-06	
Ac-227	U-235	1.000E+00	3.899E-09	2.762E-08	1.419E-07	1.101E-06	6.162E-06	2.705E-05	1.004E-04	8.124E-06	
U-238	U-238	5.400E-05	4.800E-07	4.719E-07	4.560E-07	4.045E-07	2.873E-07	5.282E-07	1.033E-07	6.250E-13	
U-238	U-238	9.999E-01	3.093E-02	3.041E-02	2.938E-02	2.606E-02	1.851E-02	1.420E-02	2.143E-03	1.299E-08	
U-238	äDOSE(j)		3.093E-02	3.041E-02	2.938E-02	2.606E-02	1.851E-02	1.420E-02	2.143E-03	1.299E-08	
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	

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

Summary : RESRAD Harshaw OU2 Model AF 300 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 7.47 seconds

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Time = 0.000E+00	12
Time = 1.000E+00	13
Time = 3.000E+00	14
Time = 1.000E+01	15
Time = 3.000E+01	16
Time = 1.000E+02	17
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Summary : RESRAD Harshaw OU2 Model AF 1000 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless		2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		5.000E-06	5.000E-06	RTF(2,3)
D-34					
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless		1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.000E-04	3.000E-04	RTF(3,3)
D-34					
D-34	Po-210 , plant/soil concentration ratio, dimensionless		1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d		5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d		3.400E-04	3.400E-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-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)

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231, fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231, crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D, fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D, crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210, fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210, crustacea and mollusks	2.000E+04	2.000E+04	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)

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#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 Harshaw OU2 Model AF 1000 SM Total U

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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)	1.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	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	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	not used	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	not used	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	not used	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

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	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	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	1000.00 square meters	U-234	4.890E-01
Thickness:	1.50 meters	U-235	2.250E-02
Cover Depth:	0.00 meters	U-238	4.890E-01

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)
AAAAAAAAAAAAAAAAAAAAAAAAAAAA

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.277E-02	5.188E-02	5.014E-02	4.448E-02	3.160E-02	5.658E-02	1.149E-02	5.558E-04
M(t):	2.111E-03	2.075E-03	2.005E-03	1.779E-03	1.264E-03	2.263E-03	4.595E-04	2.223E-05

Maximum TDOSE(t): 7.820E-02 mrem/yr at t = 184.8 ± 0.4 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 = 1.848E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
U-234	4.706E-05	0.0006	1.620E-05	0.0002	0.000E+00	0.0000	3.893E-04	0.0050	0.000E+00	0.0000	0.000E+00	0.0000	1.614E-04	0.0021
U-235	2.312E-04	0.0030	1.208E-06	0.0000	0.000E+00	0.0000	2.547E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.513E-05	0.0002
U-238	9.552E-04	0.0122	1.409E-05	0.0002	0.000E+00	0.0000	3.382E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	1.478E-04	0.0019
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.234E-03	0.0158	3.149E-05	0.0004	0.000E+00	0.0000	7.529E-04	0.0096	0.000E+00	0.0000	0.000E+00	0.0000	3.244E-04	0.0041

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.848E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.795E-02	0.4853	0.000E+00	0.0000	0.000E+00	0.0000	3.856E-02	0.4931
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.841E-03	0.0235	0.000E+00	0.0000	0.000E+00	0.0000	2.114E-03	0.0270
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.607E-02	0.4612	0.000E+00	0.0000	0.000E+00	0.0000	3.752E-02	0.4798
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.586E-02	0.9700	0.000E+00	0.0000	0.000E+00	0.0000	7.820E-02	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.
U-234	6.180E-05	0.0012	3.723E-04	0.0071	0.000E+00	0.0000	8.418E-03	0.1595	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-03	0.0697
U-235	5.288E-03	0.1002	1.596E-05	0.0003	0.000E+00	0.0000	3.659E-04	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-04	0.0030
U-238	2.259E-02	0.4281	3.329E-04	0.0063	0.000E+00	0.0000	7.993E-03	0.1515	0.000E+00	0.0000	0.000E+00	0.0000	3.495E-03	0.0662
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.794E-02	0.5294	7.212E-04	0.0137	0.000E+00	0.0000	1.678E-02	0.3179	0.000E+00	0.0000	0.000E+00	0.0000	7.335E-03	0.1390

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.
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	1.253E-02	0.2375
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	5.830E-03	0.1105
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	3.441E-02	0.6520
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.277E-02	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.
U-234	6.076E-05	0.0012	3.660E-04	0.0071	0.000E+00	0.0000	8.276E-03	0.1595	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-03	0.0697
U-235	5.198E-03	0.1002	1.570E-05	0.0003	0.000E+00	0.0000	3.598E-04	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-04	0.0030
U-238	2.221E-02	0.4280	3.273E-04	0.0063	0.000E+00	0.0000	7.858E-03	0.1515	0.000E+00	0.0000	0.000E+00	0.0000	3.435E-03	0.0662
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.747E-02	0.5294	7.090E-04	0.0137	0.000E+00	0.0000	1.649E-02	0.3179	0.000E+00	0.0000	0.000E+00	0.0000	7.211E-03	0.1390

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.
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	1.232E-02	0.2375
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	5.731E-03	0.1105
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	3.383E-02	0.6520
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.188E-02	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 = 3.000E+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.
U-234	5.875E-05	0.0012	3.537E-04	0.0071	0.000E+00	0.0000	7.998E-03	0.1595	0.000E+00	0.0000	0.000E+00	0.0000	3.496E-03	0.0697
U-235	5.024E-03	0.1002	1.518E-05	0.0003	0.000E+00	0.0000	3.477E-04	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-04	0.0030
U-238	2.146E-02	0.4280	3.163E-04	0.0063	0.000E+00	0.0000	7.594E-03	0.1515	0.000E+00	0.0000	0.000E+00	0.0000	3.320E-03	0.0662
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.654E-02	0.5294	6.851E-04	0.0137	0.000E+00	0.0000	1.594E-02	0.3179	0.000E+00	0.0000	0.000E+00	0.0000	6.969E-03	0.1390

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.191E-02	0.2375
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	5.539E-03	0.1105
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	3.269E-02	0.6520
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	5.014E-02	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+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.
U-234	5.243E-05	0.0012	3.138E-04	0.0071	0.000E+00	0.0000	7.095E-03	0.1595	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-03	0.0697
U-235	4.457E-03	0.1002	1.351E-05	0.0003	0.000E+00	0.0000	3.090E-04	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-04	0.0031
U-238	1.904E-02	0.4280	2.805E-04	0.0063	0.000E+00	0.0000	6.737E-03	0.1515	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-03	0.0662
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.355E-02	0.5294	6.079E-04	0.0137	0.000E+00	0.0000	1.414E-02	0.3179	0.000E+00	0.0000	0.000E+00	0.0000	6.183E-03	0.1390

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+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.
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	1.056E-02	0.2375
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	4.916E-03	0.1105
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	2.900E-02	0.6520
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.448E-02	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 = 3.000E+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.
U-234	3.955E-05	0.0013	2.230E-04	0.0071	0.000E+00	0.0000	5.040E-03	0.1595	0.000E+00	0.0000	0.000E+00	0.0000	2.204E-03	0.0697
U-235	3.167E-03	0.1002	9.775E-06	0.0003	0.000E+00	0.0000	2.224E-04	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	1.002E-04	0.0032
U-238	1.352E-02	0.4278	1.992E-04	0.0063	0.000E+00	0.0000	4.784E-03	0.1514	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-03	0.0662
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.673E-02	0.5293	4.320E-04	0.0137	0.000E+00	0.0000	1.005E-02	0.3179	0.000E+00	0.0000	0.000E+00	0.0000	4.395E-03	0.1391

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	7.507E-03	0.2376
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	3.500E-03	0.1108
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	2.059E-02	0.6517
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.160E-02	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.
U-234	3.023E-05	0.0005	6.761E-05	0.0012	0.000E+00	0.0000	1.534E-03	0.0271	0.000E+00	0.0000	0.000E+00	0.0000	6.683E-04	0.0118
U-235	9.629E-04	0.0170	3.452E-06	0.0001	0.000E+00	0.0000	7.646E-05	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	3.819E-05	0.0007
U-238	4.079E-03	0.0721	6.013E-05	0.0011	0.000E+00	0.0000	1.444E-03	0.0255	0.000E+00	0.0000	0.000E+00	0.0000	6.312E-04	0.0112
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.072E-03	0.0896	1.312E-04	0.0023	0.000E+00	0.0000	3.055E-03	0.0540	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-03	0.0236

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-02	0.4163	0.000E+00	0.0000	0.000E+00	0.0000	2.586E-02	0.4569
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.054E-03	0.0186	0.000E+00	0.0000	0.000E+00	0.0000	2.135E-03	0.0377
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.238E-02	0.3955	0.000E+00	0.0000	0.000E+00	0.0000	2.859E-02	0.5053
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.699E-02	0.8304	0.000E+00	0.0000	0.000E+00	0.0000	5.658E-02	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 = 3.000E+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.
U-234	7.754E-05	0.0068	2.669E-06	0.0002	0.000E+00	0.0000	1.080E-04	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	2.975E-05	0.0026
U-235	3.606E-05	0.0031	4.363E-07	0.0000	0.000E+00	0.0000	8.621E-06	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	6.249E-06	0.0005
U-238	1.330E-04	0.0116	1.962E-06	0.0002	0.000E+00	0.0000	4.711E-05	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-05	0.0018
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.466E-04	0.0215	5.067E-06	0.0004	0.000E+00	0.0000	1.638E-04	0.0143	0.000E+00	0.0000	0.000E+00	0.0000	5.660E-05	0.0049

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.384E-03	0.4687	0.000E+00	0.0000	0.000E+00	0.0000	5.602E-03	0.4877
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.344E-04	0.0465	0.000E+00	0.0000	0.000E+00	0.0000	5.857E-04	0.0510
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.4437	0.000E+00	0.0000	0.000E+00	0.0000	5.299E-03	0.4613
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-02	0.9589	0.000E+00	0.0000	0.000E+00	0.0000	1.149E-02	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.
U-234	1.910E-04	0.3436	4.607E-07	0.0008	0.000E+00	0.0000	1.463E-04	0.2633	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-05	0.0276
U-235	1.695E-07	0.0003	1.177E-08	0.0000	0.000E+00	0.0000	2.227E-07	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-07	0.0003
U-238	3.152E-08	0.0001	8.892E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-09	0.0000
Total	1.912E-04	0.3439	4.726E-07	0.0009	0.000E+00	0.0000	1.466E-04	0.2638	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-05	0.0280

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-04	0.3142	0.000E+00	0.0000	0.000E+00	0.0000	5.278E-04	0.9496
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.726E-05	0.0490	0.000E+00	0.0000	0.000E+00	0.0000	2.784E-05	0.0501
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-07	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.670E-07	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.020E-04	0.3635	0.000E+00	0.0000	0.000E+00	0.0000	5.558E-04	1.0000

Sum of all water independent and dependent pathways.

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

At specific activity limit

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
XXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX
U-234	4.890E-01	184.8 ± 0.4	7.886E-02	3.170E+02	7.886E-02	3.170E+02
U-235	2.250E-02	0.000E+00	2.591E-01	9.648E+01	9.395E-02	2.661E+02
U-238	4.890E-01	185.0 ± 0.4	7.674E-02	3.258E+02	7.673E-02	3.258E+02
iiiiiiii	iiiiiiiiii	iiiiiiiiiiiiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	1.253E-02	1.232E-02	1.191E-02	1.056E-02	7.500E-03	2.582E-02	5.432E-03	3.277E-08		
U-234	U-238	9.999E-01	1.771E-08	5.234E-08	1.181E-07	3.143E-07	6.484E-07	7.356E-06	4.629E-06	9.309E-11		
U-234	äDOSE(j)		1.253E-02	1.232E-02	1.191E-02	1.056E-02	7.500E-03	2.582E-02	5.436E-03	3.287E-08		
Th-230	U-234	1.000E+00	6.934E-08	2.014E-07	4.579E-07	1.289E-06	3.179E-06	6.450E-06	8.014E-06	7.645E-06		
Th-230	U-238	9.999E-01	6.708E-14	4.482E-13	2.279E-12	1.867E-11	1.257E-10	6.778E-10	1.418E-09	1.429E-09		
Th-230	äDOSE(j)		6.934E-08	2.014E-07	4.579E-07	1.289E-06	3.180E-06	6.451E-06	8.016E-06	7.647E-06		
Ra-226	U-234	1.000E+00	1.464E-09	1.035E-08	5.445E-08	4.686E-07	3.516E-06	2.637E-05	1.077E-04	2.689E-04		
Ra-226	U-238	9.999E-01	1.026E-15	1.556E-14	1.802E-13	4.520E-12	9.317E-11	1.974E-09	1.423E-08	4.442E-08		
Ra-226	äDOSE(j)		1.464E-09	1.035E-08	5.445E-08	4.686E-07	3.516E-06	2.637E-05	1.077E-04	2.689E-04		
Pb-210	U-234	1.000E+00	4.833E-12	6.252E-11	6.552E-10	1.511E-08	2.840E-07	4.768E-06	3.321E-05	1.145E-04		
Pb-210	U-238	9.999E-01	2.877E-18	7.600E-17	1.691E-15	1.126E-13	5.976E-12	1.062E-09	5.195E-09	2.988E-08		
Pb-210	äDOSE(j)		4.833E-12	6.252E-11	6.552E-10	1.511E-08	2.840E-07	4.769E-06	3.321E-05	1.145E-04		
Po-210	U-234	1.000E+00	1.433E-13	2.675E-12	3.814E-11	1.113E-09	2.290E-08	5.157E-07	2.142E-05	1.368E-04		
Po-210	U-238	9.999E-01	7.723E-20	2.922E-18	9.025E-17	7.965E-15	4.744E-13	2.501E-09	5.936E-09	5.918E-08		
Po-210	äDOSE(j)		1.433E-13	2.675E-12	3.814E-11	1.113E-09	2.290E-08	5.182E-07	2.143E-05	1.368E-04		
U-235	U-235	1.000E+00	5.830E-03	5.731E-03	5.538E-03	4.913E-03	3.489E-03	2.077E-03	2.674E-04	1.623E-09		
Pa-231	U-235	1.000E+00	9.366E-08	2.609E-07	5.813E-07	1.596E-06	3.725E-06	1.492E-05	7.420E-05	7.322E-06		
Ac-227	U-235	1.000E+00	4.659E-09	3.284E-08	1.684E-07	1.305E-06	7.300E-06	4.365E-05	2.441E-04	2.052E-05		
U-238	U-238	5.400E-05	6.076E-07	5.973E-07	5.772E-07	5.120E-07	3.636E-07	1.256E-06	2.645E-07	1.599E-12		
U-238	U-238	9.999E-01	3.441E-02	3.383E-02	3.269E-02	2.900E-02	2.059E-02	2.858E-02	5.294E-03	3.203E-08		
U-238	äDOSE(j)		3.441E-02	3.383E-02	3.269E-02	2.900E-02	2.059E-02	2.859E-02	5.294E-03	3.204E-08		
iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii	iiiiiiii

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

Summary : RESRAD Harshaw OU2 Model AF 1000 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
íííííííí	íííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí	íííííííííí		

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

RESRAD.EXE execution time = 9.94 seconds

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

	Menu	Parameter	Current Value#	Base Case*	Parameter Name
<hr/>					
D-1	Th-230		5.480E-04	5.480E-04	DCF3(6)
D-1	U-234		2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D		2.673E-04	2.660E-04	DCF3(8)
D-1	U-238		2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D		2.687E-04	2.550E-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	Pa-231	, plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34	Po-210	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210	, milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(4,3)
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	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	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	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	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	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-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)

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OU2 Model AF 3000 SM Total U

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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)	3.000E+03	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Total U

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Total U

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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	not used	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	not used	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	not used	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

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	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	
AAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Area:	3000.00 square meters	U-234	4.890E-01
Thickness:	1.50 meters	U-235	2.250E-02
Cover Depth:	0.00 meters	U-238	4.890E-01

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)
AAAAAAAAAAAAAAAAAAAAAAAAAAAA
t (years): 0.000E+00 1.000E+00 3.000E+00 1.000E+01 3.000E+01 1.000E+02 3.000E+02 1.000E+03
TDOSE(t): 5.343E-02 5.252E-02 5.075E-02 4.503E-02 3.199E-02 5.670E-02 1.149E-02 5.598E-04
M(t): 2.137E-03 2.101E-03 2.030E-03 1.801E-03 1.280E-03 2.268E-03 4.597E-04 2.239E-05
Maximum TDOSE(t): 7.824E-02 mrem/yr at t = 185.0 ± 0.4 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 = 1.850E+02 years														
Water Independent Pathways (Inhalation excludes radon)														
	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA	AAAAA
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA	AAAAAA
U-234	4.807E-05	0.0006	1.811E-05	0.0002	0.000E+00	0.0000	3.882E-04	0.0050	0.000E+00	0.0000	0.000E+00	0.0000	1.610E-04	0.0021
U-235	2.343E-04	0.0030	1.352E-06	0.0000	0.000E+00	0.0000	2.542E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.510E-05	0.0002
U-238	9.724E-04	0.0124	1.575E-05	0.0002	0.000E+00	0.0000	3.372E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	1.474E-04	0.0019
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.255E-03	0.0160	3.521E-05	0.0005	0.000E+00	0.0000	7.508E-04	0.0096	0.000E+00	0.0000	0.000E+00	0.0000	3.235E-04	0.0041

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)														
As mrem/yr and Fraction of Total Dose At t = 1.850E+02 years														
Water Dependent Pathways														
	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Nuclide														
AAAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA	AAAAAAA	AAAAAA
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.796E-02	0.4852	0.000E+00	0.0000	0.000E+00	0.0000	3.857E-02	0.4930
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.841E-03	0.0235	0.000E+00	0.0000	0.000E+00	0.0000	2.118E-03	0.0271
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.607E-02	0.4611	0.000E+00	0.0000	0.000E+00	0.0000	3.755E-02	0.4799
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.587E-02	0.9698	0.000E+00	0.0000	0.000E+00	0.0000	7.824E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 3000 SM Total U

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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)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	6.278E-05	0.0012	4.175E-04	0.0078	0.000E+00	0.0000	8.419E-03	0.1576	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-03	0.0689
U-235	5.374E-03	0.1006	1.790E-05	0.0003	0.000E+00	0.0000	3.660E-04	0.0068	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-04	0.0030
U-238	2.307E-02	0.4318	3.733E-04	0.0070	0.000E+00	0.0000	7.993E-03	0.1496	0.000E+00	0.0000	0.000E+00	0.0000	3.495E-03	0.0654
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.850E-02	0.5335	8.088E-04	0.0151	0.000E+00	0.0000	1.678E-02	0.3140	0.000E+00	0.0000	0.000E+00	0.0000	7.335E-03	0.1373

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

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	1.258E-02	0.2355
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	5.918E-03	0.1108
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	3.493E-02	0.6538
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.343E-02	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.
U-234	6.172E-05	0.0012	4.104E-04	0.0078	0.000E+00	0.0000	8.277E-03	0.1576	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-03	0.0689
U-235	5.283E-03	0.1006	1.760E-05	0.0003	0.000E+00	0.0000	3.598E-04	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-04	0.0030
U-238	2.268E-02	0.4317	3.670E-04	0.0070	0.000E+00	0.0000	7.859E-03	0.1496	0.000E+00	0.0000	0.000E+00	0.0000	3.435E-03	0.0654
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.802E-02	0.5335	7.951E-04	0.0151	0.000E+00	0.0000	1.649E-02	0.3141	0.000E+00	0.0000	0.000E+00	0.0000	7.211E-03	0.1373

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.
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	1.237E-02	0.2355
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	5.818E-03	0.1108
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	3.434E-02	0.6538
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.252E-02	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 = 3.000E+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.
U-234	5.968E-05	0.0012	3.966E-04	0.0078	0.000E+00	0.0000	7.998E-03	0.1576	0.000E+00	0.0000	0.000E+00	0.0000	3.496E-03	0.0689
U-235	5.105E-03	0.1006	1.702E-05	0.0003	0.000E+00	0.0000	3.478E-04	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-04	0.0030
U-238	2.191E-02	0.4317	3.547E-04	0.0070	0.000E+00	0.0000	7.594E-03	0.1496	0.000E+00	0.0000	0.000E+00	0.0000	3.320E-03	0.0654
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.708E-02	0.5335	7.683E-04	0.0151	0.000E+00	0.0000	1.594E-02	0.3141	0.000E+00	0.0000	0.000E+00	0.0000	6.969E-03	0.1373

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.195E-02	0.2355
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	5.622E-03	0.1108
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	3.318E-02	0.6538
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.075E-02	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+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.
U-234	5.326E-05	0.0012	3.519E-04	0.0078	0.000E+00	0.0000	7.095E-03	0.1576	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-03	0.0689
U-235	4.529E-03	0.1006	1.515E-05	0.0003	0.000E+00	0.0000	3.090E-04	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-04	0.0030
U-238	1.944E-02	0.4317	3.146E-04	0.0070	0.000E+00	0.0000	6.737E-03	0.1496	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-03	0.0654
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.402E-02	0.5335	6.817E-04	0.0151	0.000E+00	0.0000	1.414E-02	0.3141	0.000E+00	0.0000	0.000E+00	0.0000	6.183E-03	0.1373

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+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.
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	1.060E-02	0.2355
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	4.990E-03	0.1108
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	2.944E-02	0.6537
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	4.503E-02	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 = 3.000E+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.
U-234	4.019E-05	0.0013	2.500E-04	0.0078	0.000E+00	0.0000	5.040E-03	0.1576	0.000E+00	0.0000	0.000E+00	0.0000	2.204E-03	0.0689
U-235	3.219E-03	0.1006	1.096E-05	0.0003	0.000E+00	0.0000	2.224E-04	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	1.002E-04	0.0031
U-238	1.380E-02	0.4315	2.234E-04	0.0070	0.000E+00	0.0000	4.784E-03	0.1496	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-03	0.0654
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	1.706E-02	0.5334	4.844E-04	0.0151	0.000E+00	0.0000	1.005E-02	0.3141	0.000E+00	0.0000	0.000E+00	0.0000	4.395E-03	0.1374

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	7.534E-03	0.2355
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	3.552E-03	0.1110
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	2.090E-02	0.6534
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	3.199E-02	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.
U-234	3.080E-05	0.0005	7.582E-05	0.0013	0.000E+00	0.0000	1.534E-03	0.0271	0.000E+00	0.0000	0.000E+00	0.0000	6.683E-04	0.0118
U-235	9.786E-04	0.0173	3.871E-06	0.0001	0.000E+00	0.0000	7.646E-05	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	3.819E-05	0.0007
U-238	4.165E-03	0.0735	6.744E-05	0.0012	0.000E+00	0.0000	1.444E-03	0.0255	0.000E+00	0.0000	0.000E+00	0.0000	6.312E-04	0.0111
Total	5.175E-03	0.0913	1.471E-04	0.0026	0.000E+00	0.0000	3.055E-03	0.0539	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-03	0.0236

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-02	0.4154	0.000E+00	0.0000	0.000E+00	0.0000	2.586E-02	0.4561
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.054E-03	0.0186	0.000E+00	0.0000	0.000E+00	0.0000	2.152E-03	0.0379
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.238E-02	0.3947	0.000E+00	0.0000	0.000E+00	0.0000	2.869E-02	0.5059
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.699E-02	0.8287	0.000E+00	0.0000	0.000E+00	0.0000	5.670E-02	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 = 3.000E+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.
U-234	7.914E-05	0.0069	2.993E-06	0.0003	0.000E+00	0.0000	1.080E-04	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	2.975E-05	0.0026
U-235	3.666E-05	0.0032	4.893E-07	0.0000	0.000E+00	0.0000	8.622E-06	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	6.249E-06	0.0005
U-238	1.358E-04	0.0118	2.200E-06	0.0002	0.000E+00	0.0000	4.712E-05	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-05	0.0018
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.516E-04	0.0219	5.683E-06	0.0005	0.000E+00	0.0000	1.638E-04	0.0143	0.000E+00	0.0000	0.000E+00	0.0000	5.660E-05	0.0049

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.384E-03	0.4685	0.000E+00	0.0000	0.000E+00	0.0000	5.604E-03	0.4876
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.344E-04	0.0465	0.000E+00	0.0000	0.000E+00	0.0000	5.864E-04	0.0510
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.4434	0.000E+00	0.0000	0.000E+00	0.0000	5.302E-03	0.4614
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-02	0.9584	0.000E+00	0.0000	0.000E+00	0.0000	1.149E-02	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.
U-234	1.949E-04	0.3482	5.167E-07	0.0009	0.000E+00	0.0000	1.464E-04	0.2614	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-05	0.0275
U-235	1.729E-07	0.0003	1.320E-08	0.0000	0.000E+00	0.0000	2.227E-07	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-07	0.0003
U-238	3.217E-08	0.0001	9.972E-11	0.0000	0.000E+00	0.0000	2.381E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-09	0.0000
Total	1.951E-04	0.3485	5.300E-07	0.0009	0.000E+00	0.0000	1.466E-04	0.2619	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-05	0.0278

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-04	0.3120	0.000E+00	0.0000	0.000E+00	0.0000	5.318E-04	0.9500
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.726E-05	0.0487	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-05	0.0497
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-07	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.677E-07	0.0003
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.020E-04	0.3609	0.000E+00	0.0000	0.000E+00	0.0000	5.598E-04	1.0000

Sum of all water independent and dependent pathways.

The DSR includes contributions from associated (half-life ≤ 30 days) daughters.

[illegible]

Nuclide	Initial	tmin	DSR(i,tmin)	G(i,tmin)	DSR(i,tmax)	G(i,tmax)
(i)	(pCi/g)	(years)		(pCi/g)		(pCi/g)
U-234	4.890E-01	184.9 ± 0.4	7.888E-02	3.170E+02	7.888E-02	3.169E+02
U-235	2.250E-02	0.000E+00	2.630E-01	9.505E+01	9.412E-02	2.656E+02
U-238	4.890E-01	185.0 ± 0.4	7.678E-02	3.256E+02	7.678E-02	3.256E+02

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00		1.258E-02	1.237E-02	1.195E-02	1.060E-02	7.527E-03	2.583E-02	5.432E-03	3.278E-08	
U-234	U-238	9.999E-01		1.778E-08	5.254E-08	1.185E-07	3.155E-07	6.508E-07	7.358E-06	4.629E-06	9.309E-11	
U-234	äDOSE(j)			1.258E-02	1.237E-02	1.195E-02	1.060E-02	7.528E-03	2.583E-02	5.437E-03	3.287E-08	
Th-230	U-234	1.000E+00		6.986E-08	2.030E-07	4.615E-07	1.299E-06	3.204E-06	6.500E-06	8.074E-06	7.702E-06	
Th-230	U-238	9.999E-01		6.757E-14	4.516E-13	2.296E-12	1.881E-11	1.267E-10	6.830E-10	1.427E-09	1.438E-09	
Th-230	äDOSE(j)			6.986E-08	2.030E-07	4.615E-07	1.299E-06	3.205E-06	6.501E-06	8.076E-06	7.703E-06	
Ra-226	U-234	1.000E+00		1.487E-09	1.051E-08	5.527E-08	4.756E-07	3.568E-06	2.676E-05	1.093E-04	2.728E-04	
Ra-226	U-238	9.999E-01		1.042E-15	1.580E-14	1.830E-13	4.587E-12	9.456E-11	2.002E-09	1.443E-08	4.505E-08	
Ra-226	äDOSE(j)			1.487E-09	1.051E-08	5.527E-08	4.756E-07	3.568E-06	2.676E-05	1.093E-04	2.728E-04	
Pb-210	U-234	1.000E+00		4.833E-12	6.253E-11	6.552E-10	1.511E-08	2.840E-07	4.768E-06	3.321E-05	1.145E-04	
Pb-210	U-238	9.999E-01		2.877E-18	7.600E-17	1.691E-15	1.126E-13	5.976E-12	1.062E-09	5.195E-09	2.988E-08	
Pb-210	äDOSE(j)			4.833E-12	6.253E-11	6.552E-10	1.511E-08	2.840E-07	4.770E-06	3.321E-05	1.145E-04	
Po-210	U-234	1.000E+00		1.434E-13	2.675E-12	3.815E-11	1.113E-09	2.290E-08	5.157E-07	2.142E-05	1.368E-04	
Po-210	U-238	9.999E-01		7.723E-20	2.922E-18	9.026E-17	7.966E-15	4.744E-13	2.501E-09	5.937E-09	5.918E-08	
Po-210	äDOSE(j)			1.434E-13	2.675E-12	3.815E-11	1.113E-09	2.290E-08	5.182E-07	2.143E-05	1.368E-04	
U-235	U-235	1.000E+00		5.918E-03	5.817E-03	5.622E-03	4.987E-03	3.541E-03	2.093E-03	2.679E-04	1.627E-09	
Pa-231	U-235	1.000E+00		9.417E-08	2.624E-07	5.847E-07	1.605E-06	3.747E-06	1.495E-05	7.422E-05	7.323E-06	
Ac-227	U-235	1.000E+00		4.701E-09	3.313E-08	1.699E-07	1.316E-06	7.363E-06	4.384E-05	2.442E-04	2.053E-05	
U-238	U-238	5.400E-05		6.098E-07	5.995E-07	5.793E-07	5.139E-07	3.649E-07	1.257E-06	2.645E-07	1.599E-12	
U-238	U-238	9.999E-01		3.493E-02	3.434E-02	3.318E-02	2.943E-02	2.090E-02	2.868E-02	5.297E-03	3.205E-08	
U-238	äDOSE(j)			3.493E-02	3.434E-02	3.318E-02	2.943E-02	2.090E-02	2.868E-02	5.297E-03	3.206E-08	
iiiiiiii	iiiiiiii	iiiiiiiiii		iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii	iiiiiiiiii

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA	AAAAAAA
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 10.03 seconds

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: FGR 11

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: FGR 12)	4.951E-04	4.951E-04	DCF1 (1)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (2)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (3)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (4)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (5)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (6)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (7)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (8)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (9)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (10)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (11)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (12)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (13)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (14)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (15)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (16)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (17)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (18)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (19)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (20)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (21)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (22)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (23)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (24)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (25)
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (26)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (27)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (28)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (29)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (30)
B-1 Dose conversion factors for inhalation, mrem/pCi:				
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (2)
B-1	Pb-210+D	1.380E-02	1.360E-02	DCF2 (3)
B-1	Po-210	9.400E-03	9.400E-03	DCF2 (4)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (5)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (6)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (7)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (8)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (9)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (10)
D-1 Dose conversion factors for ingestion, mrem/pCi:				
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (2)
D-1	Pb-210+D	5.376E-03	5.370E-03	DCF3 (3)
D-1	Po-210	1.900E-03	1.900E-03	DCF3 (4)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (5)

Dose Library: FGR 11

		Current	Base	Parameter
Menu	Parameter	Value#	Case*	Name
XX				
D-1	Th-230	5.480E-04	5.480E-04	DCF3(6)
D-1	U-234	2.830E-04	2.830E-04	DCF3(7)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(8)
D-1	U-238	2.550E-04	2.550E-04	DCF3(9)
D-1	U-238+D	2.687E-04	2.550E-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	Pa-231 , plant/soil concentration ratio, dimensionless	2.000E-05	1.000E-02	RTF(2,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(2,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	5.000E-06	5.000E-06	RTF(2,3)
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.000E-04	3.000E-04	RTF(3,3)
D-34	Po-210 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(4,1)
D-34	Po-210 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d	5.000E-03	5.000E-03	RTF(4,2)
D-34	Po-210 , milk/livestock-intake ratio, (pCi/L)/(pCi/d	3.400E-04	3.400E-04	RTF(4,3)
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	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	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	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	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	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-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)

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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

Dose Library: FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(2,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Po-210 , fish	1.000E+02	1.000E+02	BIOFAC(4,1)
D-5	Po-210 , crustacea and mollusks	2.000E+04	2.000E+04	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 Harshaw OU2 Model AF 10000 SM Total U

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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)	1.000E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.500E+00	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)	1.050E+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)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	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): U-234	4.890E-01	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): U-235	2.250E-02	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): U-238	4.890E-01	0.000E+00	---	S1(9)
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)	1.330E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	5.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	8.800E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	2.000E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.950E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.510E-01	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.000E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	2.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	4.818E+05	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)	1.720E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.500E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.370E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.400E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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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	Well pump intake depth (m below water table)	5.000E+00	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)	2.000E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.720E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	3.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	1.800E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.000E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	4.400E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.200E+01	1.000E+01	---	HCUZ (1)

R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCC (7)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (8)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (8,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	1.400E+01	5.000E+01	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	1.400E+01	5.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.712E-02	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)	2.000E+01	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.203E-02	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)	5.000E+01	5.000E+01	---	DCNUCC (2)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.844E-03	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)

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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 Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC (3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU (3,1
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.427E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)

R016	Distribution coefficients for daughter Po-210				
R016	Contaminated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCU (4,1
R016	Saturated zone (cm**3/g)	1.000E+01	1.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.382E-02	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)	2.530E+02	7.000E+01	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCU (5,1
R016	Saturated zone (cm**3/g)	2.530E+02	7.000E+01	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	9.605E-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)	3.300E+03	6.000E+04	---	DCNUCC (6)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (6,1
R016	Saturated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.370E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)

R017	Inhalation rate (m**3/yr)	5.548E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	4.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.550E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	7.990E-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)	4.690E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.140E+01	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	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	5.000E-02	-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)	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	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	1.000E+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)	not used	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)	not used	8.000E-02	---	TE(3)

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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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	not used	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	not used	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	not used	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 : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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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	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: 10000.00 square meters	U-234	4.890E-01
Thickness: 1.50 meters	U-235	2.250E-02
Cover Depth: 0.00 meters	U-238	4.890E-01

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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	5.432E-02	5.340E-02	5.160E-02	4.578E-02	3.252E-02	5.686E-02	1.150E-02	5.654E-04
M(t):	2.173E-03	2.136E-03	2.064E-03	1.831E-03	1.301E-03	2.275E-03	4.600E-04	2.262E-05

Maximum TDOSE(t): 7.827E-02 mrem/yr at t = 185.0 ± 0.4 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 = 1.850E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	4.941E-05	0.0006	2.051E-05	0.0003	0.000E+00	0.0000	3.882E-04	0.0050	0.000E+00	0.0000	0.000E+00	0.0000	1.610E-04	0.0021
U-235	2.400E-04	0.0031	1.531E-06	0.0000	0.000E+00	0.0000	2.542E-05	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.510E-05	0.0002
U-238	1.000E-03	0.0128	1.783E-05	0.0002	0.000E+00	0.0000	3.372E-04	0.0043	0.000E+00	0.0000	0.000E+00	0.0000	1.474E-04	0.0019
Total	1.289E-03	0.0165	3.987E-05	0.0005	0.000E+00	0.0000	7.509E-04	0.0096	0.000E+00	0.0000	0.000E+00	0.0000	3.235E-04	0.0041

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.850E+02 years

Water Dependent Pathways

Radio-	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.796E-02	0.4849	0.000E+00	0.0000	0.000E+00	0.0000	3.858E-02	0.4928
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.841E-03	0.0235	0.000E+00	0.0000	0.000E+00	0.0000	2.123E-03	0.0271
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.607E-02	0.4609	0.000E+00	0.0000	0.000E+00	0.0000	3.758E-02	0.4801
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.587E-02	0.9693	0.000E+00	0.0000	0.000E+00	0.0000	7.827E-02	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.
U-234	6.421E-05	0.0012	4.727E-04	0.0087	0.000E+00	0.0000	8.419E-03	0.1550	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-03	0.0678
U-235	5.503E-03	0.1013	2.027E-05	0.0004	0.000E+00	0.0000	3.660E-04	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	1.601E-04	0.0029
U-238	2.372E-02	0.4367	4.227E-04	0.0078	0.000E+00	0.0000	7.994E-03	0.1472	0.000E+00	0.0000	0.000E+00	0.0000	3.495E-03	0.0643
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.929E-02	0.5392	9.157E-04	0.0169	0.000E+00	0.0000	1.678E-02	0.3089	0.000E+00	0.0000	0.000E+00	0.0000	7.335E-03	0.1350

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.
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	1.264E-02	0.2326
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	6.049E-03	0.1114
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	3.563E-02	0.6560
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.432E-02	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.
U-234	6.313E-05	0.0012	4.647E-04	0.0087	0.000E+00	0.0000	8.277E-03	0.1550	0.000E+00	0.0000	0.000E+00	0.0000	3.618E-03	0.0678
U-235	5.409E-03	0.1013	1.993E-05	0.0004	0.000E+00	0.0000	3.598E-04	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	1.575E-04	0.0029
U-238	2.332E-02	0.4367	4.155E-04	0.0078	0.000E+00	0.0000	7.859E-03	0.1472	0.000E+00	0.0000	0.000E+00	0.0000	3.435E-03	0.0643
Total	2.879E-02	0.5392	9.001E-04	0.0169	0.000E+00	0.0000	1.650E-02	0.3089	0.000E+00	0.0000	0.000E+00	0.0000	7.211E-03	0.1350

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.
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	1.242E-02	0.2326
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	5.946E-03	0.1114
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	3.503E-02	0.6560
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	5.340E-02	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 = 3.000E+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.
U-234	6.104E-05	0.0012	4.491E-04	0.0087	0.000E+00	0.0000	7.999E-03	0.1550	0.000E+00	0.0000	0.000E+00	0.0000	3.496E-03	0.0678
U-235	5.227E-03	0.1013	1.927E-05	0.0004	0.000E+00	0.0000	3.478E-04	0.0067	0.000E+00	0.0000	0.000E+00	0.0000	1.525E-04	0.0030
U-238	2.254E-02	0.4367	4.015E-04	0.0078	0.000E+00	0.0000	7.595E-03	0.1472	0.000E+00	0.0000	0.000E+00	0.0000	3.320E-03	0.0643
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.782E-02	0.5392	8.699E-04	0.0169	0.000E+00	0.0000	1.594E-02	0.3089	0.000E+00	0.0000	0.000E+00	0.0000	6.969E-03	0.1350

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+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.
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	1.201E-02	0.2326
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	5.747E-03	0.1114
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	3.385E-02	0.6560
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	5.160E-02	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+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.
U-234	5.448E-05	0.0012	3.984E-04	0.0087	0.000E+00	0.0000	7.096E-03	0.1550	0.000E+00	0.0000	0.000E+00	0.0000	3.102E-03	0.0678
U-235	4.638E-03	0.1013	1.715E-05	0.0004	0.000E+00	0.0000	3.090E-04	0.0068	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-04	0.0030
U-238	1.999E-02	0.4367	3.562E-04	0.0078	0.000E+00	0.0000	6.737E-03	0.1472	0.000E+00	0.0000	0.000E+00	0.0000	2.945E-03	0.0643
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.468E-02	0.5392	7.718E-04	0.0169	0.000E+00	0.0000	1.414E-02	0.3089	0.000E+00	0.0000	0.000E+00	0.0000	6.183E-03	0.1351

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+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.
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	1.065E-02	0.2326
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	5.100E-03	0.1114
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	3.003E-02	0.6559
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
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	4.578E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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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 = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	4.112E-05	0.0013	2.831E-04	0.0087	0.000E+00	0.0000	5.041E-03	0.1550	0.000E+00	0.0000	0.000E+00	0.0000	2.204E-03	0.0678
U-235	3.296E-03	0.1013	1.241E-05	0.0004	0.000E+00	0.0000	2.224E-04	0.0068	0.000E+00	0.0000	0.000E+00	0.0000	1.002E-04	0.0031
U-238	1.420E-02	0.4365	2.530E-04	0.0078	0.000E+00	0.0000	4.784E-03	0.1471	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-03	0.0643
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	1.753E-02	0.5391	5.485E-04	0.0169	0.000E+00	0.0000	1.005E-02	0.3089	0.000E+00	0.0000	0.000E+00	0.0000	4.395E-03	0.1351

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
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	7.569E-03	0.2327
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	3.631E-03	0.1116
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	2.132E-02	0.6557
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
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	3.252E-02	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.
U-234	3.160E-05	0.0006	8.584E-05	0.0015	0.000E+00	0.0000	1.534E-03	0.0270	0.000E+00	0.0000	0.000E+00	0.0000	6.683E-04	0.0118
U-235	1.002E-03	0.0176	4.383E-06	0.0001	0.000E+00	0.0000	7.647E-05	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	3.819E-05	0.0007
U-238	4.284E-03	0.0753	7.635E-05	0.0013	0.000E+00	0.0000	1.444E-03	0.0254	0.000E+00	0.0000	0.000E+00	0.0000	6.312E-04	0.0111
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	5.317E-03	0.0935	1.666E-04	0.0029	0.000E+00	0.0000	3.055E-03	0.0537	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-03	0.0235

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.356E-02	0.4142	0.000E+00	0.0000	0.000E+00	0.0000	2.588E-02	0.4550
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.054E-03	0.0185	0.000E+00	0.0000	0.000E+00	0.0000	2.176E-03	0.0383
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.238E-02	0.3935	0.000E+00	0.0000	0.000E+00	0.0000	2.881E-02	0.5067
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.699E-02	0.8263	0.000E+00	0.0000	0.000E+00	0.0000	5.686E-02	1.0000

Sum of all water independent and dependent pathways.

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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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 = 3.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	8.137E-05	0.0071	3.389E-06	0.0003	0.000E+00	0.0000	1.081E-04	0.0094	0.000E+00	0.0000	0.000E+00	0.0000	2.975E-05	0.0026
U-235	3.755E-05	0.0033	5.540E-07	0.0000	0.000E+00	0.0000	8.622E-06	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	6.249E-06	0.0005
U-238	1.397E-04	0.0121	2.491E-06	0.0002	0.000E+00	0.0000	4.712E-05	0.0041	0.000E+00	0.0000	0.000E+00	0.0000	2.059E-05	0.0018
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	2.586E-04	0.0225	6.434E-06	0.0006	0.000E+00	0.0000	1.638E-04	0.0142	0.000E+00	0.0000	0.000E+00	0.0000	5.660E-05	0.0049

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

As mrem/yr and Fraction of Total Dose At t = 3.000E+02 years

Water Dependent Pathways

	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
Radio-	AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA		AAAAAAAAAAAAAAAA	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.384E-03	0.4682	0.000E+00	0.0000	0.000E+00	0.0000	5.607E-03	0.4875
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.344E-04	0.0465	0.000E+00	0.0000	0.000E+00	0.0000	5.873E-04	0.0511
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.096E-03	0.4432	0.000E+00	0.0000	0.000E+00	0.0000	5.306E-03	0.4614
iiiiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii	iiiiiiiiii	iiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.101E-02	0.9578	0.000E+00	0.0000	0.000E+00	0.0000	1.150E-02	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.
U-234	2.004E-04	0.3544	5.850E-07	0.0010	0.000E+00	0.0000	1.464E-04	0.2589	0.000E+00	0.0000	0.000E+00	0.0000	1.537E-05	0.0272
U-235	1.776E-07	0.0003	1.494E-08	0.0000	0.000E+00	0.0000	2.228E-07	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.818E-07	0.0003
U-238	3.308E-08	0.0001	1.129E-10	0.0000	0.000E+00	0.0000	2.381E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.615E-09	0.0000
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	2.006E-04	0.3548	6.000E-07	0.0011	0.000E+00	0.0000	1.466E-04	0.2593	0.000E+00	0.0000	0.000E+00	0.0000	1.555E-05	0.0275

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.
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-04	0.3089	0.000E+00	0.0000	0.000E+00	0.0000	5.374E-04	0.9504
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.726E-05	0.0482	0.000E+00	0.0000	0.000E+00	0.0000	2.786E-05	0.0493
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.090E-07	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.686E-07	0.0003
iiiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii	iiiiiiiiii	iiiiiii
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.020E-04	0.3573	0.000E+00	0.0000	0.000E+00	0.0000	5.654E-04	1.0000

Sum of all water independent and dependent pathways.

Parent	Product	Thread	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)								
(i)	(j)	Fraction	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-238	U-238	5.400E-05	1.252E-06	1.231E-06	1.190E-06	1.056E-06	7.495E-07	2.571E-06	5.410E-07	3.271E-12	
U-238-D	U-238-D	9.999E-01	7.287E-02	7.164E-02	6.922E-02	6.141E-02	4.361E-02	5.891E-02	1.084E-02	6.560E-08	
U-238-D	Th-230	9.999E-01	1.394E-13	9.322E-13	4.740E-12	3.884E-11	2.615E-10	1.410E-09	2.943E-09	2.965E-09	
U-238-D	Ra-226-D	9.999E-01	2.175E-15	3.298E-14	3.818E-13	9.573E-12	1.973E-10	4.175E-09	3.011E-08	9.393E-08	
U-238-D	Pb-210-D	9.999E-01	5.884E-18	1.554E-16	3.458E-15	2.303E-13	1.222E-11	2.173E-09	1.062E-08	6.111E-08	
U-238-D	Po-210	9.999E-01	1.579E-19	5.976E-18	1.846E-16	1.629E-14	9.704E-13	5.116E-09	1.214E-08	1.210E-07	
U-238-D	aDSR(j)		7.287E-02	7.164E-02	6.922E-02	6.141E-02	4.361E-02	5.892E-02	1.085E-02	3.448E-07	
U-235	U-235	1.000E+00	2.688E-01	2.643E-01	2.554E-01	2.265E-01	1.609E-01	9.406E-02	1.194E-02	7.251E-08	
U-235-D	Pa-231	1.000E+00	4.215E-06	1.175E-05	2.618E-05	7.190E-05	1.678E-04	6.666E-04	3.300E-03	3.255E-04	
U-235-D	Ac-227-D	1.000E+00	2.115E-07	1.490E-06	7.638E-06	5.919E-05	3.311E-04	1.960E-03	1.086E-02	9.125E-04	
U-235-D	aDSR(j)		2.688E-01	2.643E-01	2.554E-01	2.267E-01	1.614E-01	9.669E-02	2.610E-02	1.238E-03	
U-234	U-234	1.000E+00	2.584E-02	2.540E-02	2.455E-02	2.178E-02	1.546E-02	5.283E-02	1.111E-02	6.703E-08	
U-234	Th-230	1.000E+00	1.442E-07	4.190E-07	9.526E-07	2.682E-06	6.616E-06	1.342E-05	1.666E-05	1.589E-05	
U-234	Ra-226-D	1.000E+00	3.104E-09	2.194E-08	1.153E-07	9.924E-07	7.446E-06	5.584E-05	2.280E-04	5.691E-04	
U-234	Pb-210-D	1.000E+00	9.884E-12	1.279E-10	1.340E-09	3.090E-08	5.808E-07	9.752E-06	6.791E-05	2.342E-04	
U-234	Po-210	1.000E+00	2.932E-13	5.471E-12	7.802E-11	2.277E-09	4.683E-08	1.055E-06	4.381E-05	2.797E-04	
U-234	aDSR(j)		2.584E-02	2.540E-02	2.455E-02	2.178E-02	1.548E-02	5.291E-02	1.147E-02	1.099E-03	

[illegible]

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
U-234	4.890E-01	184.9 ± 0.4	7.888E-02	3.169E+02	7.889E-02	3.169E+02
U-235	2.250E-02	0.000E+00	2.688E-01	9.299E+01	9.437E-02	2.649E+02
U-238	4.890E-01	185.0 ± 0.4	7.684E-02	3.253E+02	7.684E-02	3.253E+02

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	1.264E-02	1.242E-02	1.200E-02	1.065E-02	7.562E-03	2.584E-02	5.432E-03	3.278E-08		
U-234	U-238	9.999E-01	1.786E-08	5.277E-08	1.191E-07	3.169E-07	6.538E-07	7.361E-06	4.629E-06	9.310E-11		
U-234	äDOSE(j)		1.264E-02	1.242E-02	1.200E-02	1.065E-02	7.562E-03	2.584E-02	5.437E-03	3.287E-08		
Th-230	U-234	1.000E+00	7.050E-08	2.049E-07	4.658E-07	1.312E-06	3.235E-06	6.562E-06	8.148E-06	7.772E-06		
Th-230	U-238	9.999E-01	6.818E-14	4.558E-13	2.318E-12	1.899E-11	1.279E-10	6.894E-10	1.439E-09	1.450E-09		
Th-230	äDOSE(j)		7.050E-08	2.049E-07	4.658E-07	1.312E-06	3.235E-06	6.563E-06	8.149E-06	7.773E-06		
Ra-226	U-234	1.000E+00	1.518E-09	1.073E-08	5.640E-08	4.853E-07	3.641E-06	2.730E-05	1.115E-04	2.783E-04		
Ra-226	U-238	9.999E-01	1.064E-15	1.613E-14	1.867E-13	4.681E-12	9.649E-11	2.041E-09	1.472E-08	4.593E-08		
Ra-226	äDOSE(j)		1.518E-09	1.073E-08	5.640E-08	4.853E-07	3.641E-06	2.731E-05	1.115E-04	2.783E-04		
Pb-210	U-234	1.000E+00	4.834E-12	6.253E-11	6.552E-10	1.511E-08	2.840E-07	4.769E-06	3.321E-05	1.145E-04		
Pb-210	U-238	9.999E-01	2.877E-18	7.600E-17	1.691E-15	1.126E-13	5.976E-12	1.062E-09	5.195E-09	2.988E-08		
Pb-210	äDOSE(j)		4.834E-12	6.253E-11	6.552E-10	1.511E-08	2.840E-07	4.770E-06	3.321E-05	1.145E-04		
Po-210	U-234	1.000E+00	1.434E-13	2.675E-12	3.815E-11	1.114E-09	2.290E-08	5.157E-07	2.142E-05	1.368E-04		
Po-210	U-238	9.999E-01	7.724E-20	2.922E-18	9.027E-17	7.967E-15	4.745E-13	2.501E-09	5.937E-09	5.918E-08		
Po-210	äDOSE(j)		1.434E-13	2.675E-12	3.815E-11	1.114E-09	2.290E-08	5.182E-07	2.143E-05	1.368E-04		
U-235	U-235	1.000E+00	6.049E-03	5.946E-03	5.746E-03	5.097E-03	3.620E-03	2.116E-03	2.687E-04	1.631E-09		
Pa-231	U-235	1.000E+00	9.483E-08	2.643E-07	5.892E-07	1.618E-06	3.776E-06	1.500E-05	7.424E-05	7.324E-06		
Ac-227	U-235	1.000E+00	4.759E-09	3.353E-08	1.719E-07	1.332E-06	7.449E-06	4.411E-05	2.444E-04	2.053E-05		
U-238	U-238	5.400E-05	6.125E-07	6.021E-07	5.818E-07	5.161E-07	3.665E-07	1.257E-06	2.645E-07	1.599E-12		
U-238	U-238	9.999E-01	3.563E-02	3.503E-02	3.385E-02	3.003E-02	2.132E-02	2.880E-02	5.301E-03	3.208E-08		
U-238	äDOSE(j)		3.563E-02	3.503E-02	3.385E-02	3.003E-02	2.132E-02	2.881E-02	5.301E-03	3.208E-08		
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THF(i) is the thread fraction of the parent nuclide.

Summary : RESRAD Harshaw OU2 Model AF 10000 SM Total U

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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	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
U-234	U-234	1.000E+00	4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.827E-02	2.877E-03	1.797E-08		
U-234	U-238	9.999E-01	0.000E+00	1.363E-06	3.950E-06	1.168E-05	2.488E-05	2.503E-05	2.447E-06	5.101E-11		
U-234	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
Th-230	U-234	1.000E+00	0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.505E-04	2.379E-04		
Th-230	U-238	9.999E-01	0.000E+00	6.168E-12	5.426E-11	5.569E-10	4.014E-09	2.166E-08	4.040E-08	3.959E-08		
Th-230	äS(j):		0.000E+00	4.364E-06	1.287E-05	4.044E-05	1.031E-04	2.096E-04	2.506E-04	2.379E-04		
Ra-226	U-234	1.000E+00	0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.172E-07	5.497E-06	2.244E-05	5.565E-05		
Ra-226	U-238	9.999E-01	0.000E+00	8.930E-16	2.369E-14	8.246E-13	1.872E-11	3.944E-10	2.933E-09	8.943E-09		
Ra-226	äS(j):		0.000E+00	9.476E-10	8.424E-09	8.969E-08	7.173E-07	5.498E-06	2.244E-05	5.566E-05		
Pb-210	U-234	1.000E+00	0.000E+00	9.751E-12	2.566E-10	8.688E-09	1.834E-07	3.181E-06	1.859E-05	5.088E-05		
Pb-210	U-238	9.999E-01	0.000E+00	6.905E-18	5.441E-16	6.104E-14	3.786E-12	1.977E-10	2.345E-09	8.159E-09		
Pb-210	äS(j):		0.000E+00	9.751E-12	2.566E-10	8.689E-09	1.834E-07	3.182E-06	1.860E-05	5.088E-05		
Po-210	U-234	1.000E+00	0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.106E-06	1.832E-05	5.021E-05		
Po-210	U-238	9.999E-01	0.000E+00	1.917E-18	2.988E-16	4.943E-14	3.505E-12	1.922E-10	2.308E-09	8.051E-09		
Po-210	äS(j):		0.000E+00	3.215E-12	1.576E-10	7.373E-09	1.727E-07	3.107E-06	1.832E-05	5.022E-05		
U-235	U-235	1.000E+00	2.250E-02	2.212E-02	2.137E-02	1.896E-02	1.346E-02	4.063E-03	1.325E-04	8.291E-10		
Pa-231	U-235	1.000E+00	0.000E+00	4.709E-07	1.382E-06	4.268E-06	1.033E-05	1.687E-05	8.800E-06	2.996E-07		
Ac-227	U-235	1.000E+00	0.000E+00	7.413E-09	6.387E-08	6.104E-07	3.634E-06	1.133E-05	7.097E-06	2.446E-07		
U-238	U-238	5.400E-05	2.641E-05	2.596E-05	2.508E-05	2.225E-05	1.580E-05	4.768E-06	1.555E-07	9.731E-13		
U-238	U-238	9.999E-01	4.890E-01	4.807E-01	4.645E-01	4.120E-01	2.926E-01	8.829E-02	2.879E-03	1.802E-08		
U-238	äS(j):		4.890E-01	4.807E-01	4.645E-01	4.121E-01	2.926E-01	8.830E-02	2.879E-03	1.802E-08		
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THF(i) is the thread fraction of the parent nuclide.

RESRAD.EXE execution time = 9.96 seconds