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July 17, 2006

Mr. Mike McCann
U.S. Nuclear Regulatory Commission
Region III
2443 Warrenville Road
Suite 210
Lisle, IL 60532-4352

Dear Mr. McCann:

SUBMISSION OF WEST JEFFERSON NORTH SITE DOSE ASSESSMENT DOCUMENT FOR NRC REVIEW

As a part of the license termination process for former Site Decommissioning Management Plan sites, the licensee is not required to perform a site dose modeling to ensure that the facility meets *10CFR 20 Subpart E "Radiological Criteria for License Termination"* requirements. However, Battelle has elected to submit a site dose model to assist with expediting the license termination process. Please find the attached report titled "West Jefferson North Site Dose Assessment" for Nuclear Regulatory Commission (NRC) review in support of the termination of Battelle's NRC License SNM-7 as an unrestricted use site.

If you have any questions or comments please do not hesitate to call me at 614-424-4098.

Sincerely,

Joe Jacobsen
BCLDP Radiation Safety Officer

Attachment: As stated

RECEIVED JUL 18 2006

WEST JEFFERSON NORTH SITE
DOSE ASSESSMENT

Revision 0
July 2006

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1.0 Introduction

The purpose of this dose assessment was to determine the radiation dose from residual radioactivity at the West Jefferson North (WJN) Site. The WJN Site was divided into three areas for the purposes of the assessment: 1) the Upper Area, 2) the Filter Bed Area, and 3) the JN-4 Drainpipe Area. The Upper Area and the Filter Bed Area were separated because they are each surrounded by unaffected areas and separated by an access road. The JN-4 Drainpipe Area was kept separate because it contained different radionuclides than the Upper Area and the Filter Bed Area. Radionuclide concentrations in each of these areas were determined using data from Final Status Survey reports that document the radiological conditions at the WJN Site after remediation. Radiation doses were estimated for a resident farmer who was assumed to live on the WJN Site after closure.

2.0 Site Layout

Figure 1 illustrates the layout of the WJN Site. The total area of the WJN Site is about 32 acres (Table 1). The Filter Bed Area has an area of about 2.75 acres and the Upper Area has an area of about 10.9 acres. The unaffected areas around the Filter Bed Area have an area of about 9.95 acres and the unaffected areas around the Upper Area have an area of about 8.7 acres. Within the Upper Area, there is a small area where the JN-4 Drainpipe Area is located. This area was consisted of trenches from remediating the east section of the JN-3 cooling waste sewer line and removing the JN-4 drainpipe. The area associated with the JN-3 cooling waste sewer line was 37 m^2 (1 meter wide and 37 meters long) and the area associated with the JN-4 drainpipe was 27.9 m^2 (2 feet wide and 150 feet long). The total area of the JN-4 Drainpipe Area was 64.9 m^2 (37 + 27.9 = 64.9 m^2).

Table 1. West Jefferson North Site Areas

Location	Area (acres)	Area (m^2)
Upper Area (Affected Area)	10.9	44,100
Unaffected Areas around the Upper Area	8.7	35,200
Total Upper Area	19.6	79,300
Filter Bed Area (Affected Area)	2.75	11,100
Unaffected Areas around the Filter Bed Area	9.95	40,300
Total Filter Bed Area	12.7	51,400
JN-4 Drainpipe Area	0.016	64.9
Total—All Areas	**32.3**	**131,000**

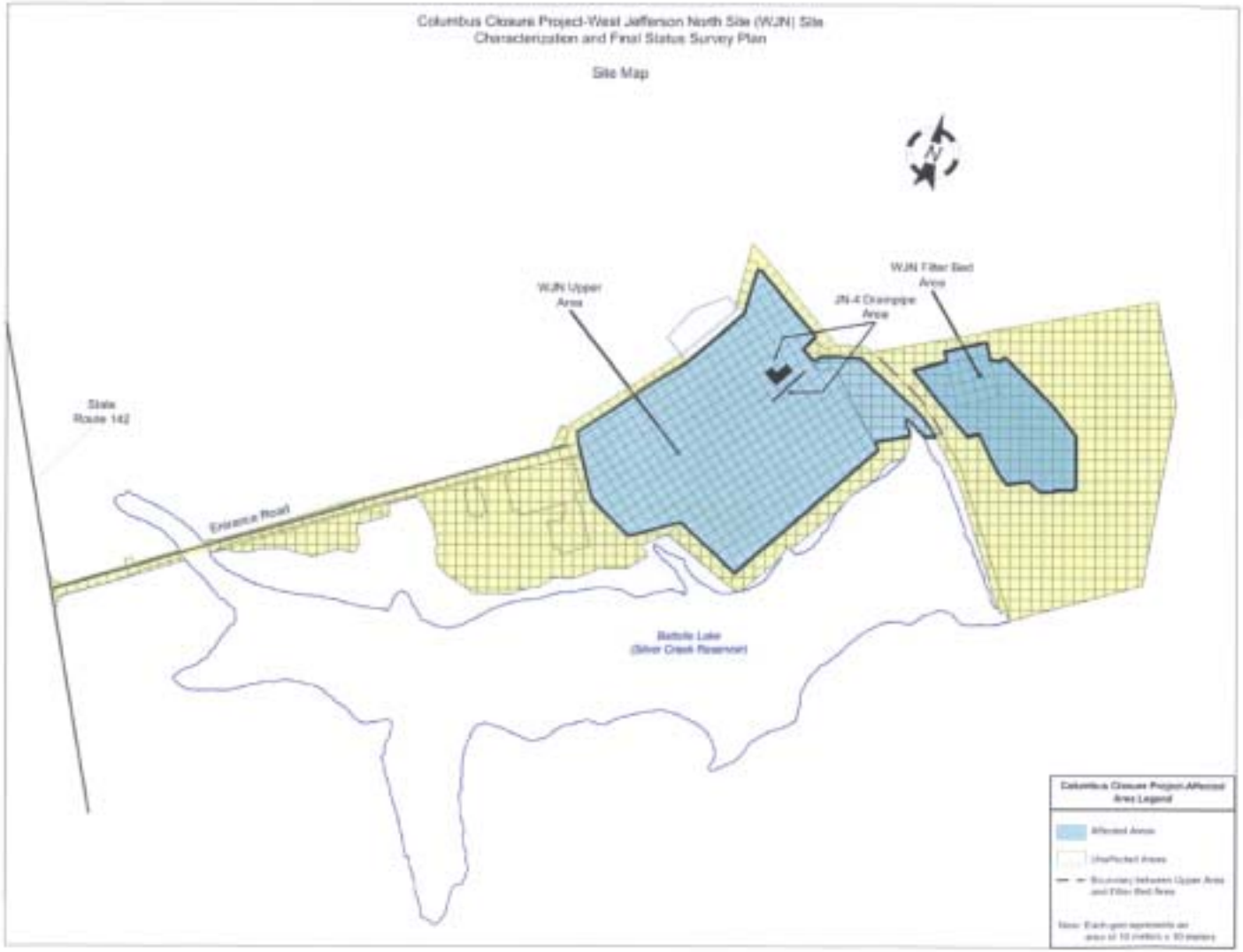

Figure 1. West Jefferson North Site Layout

3.0 Radionuclide Concentrations

The characterization of the WJN Site identified Cs-137 as the primary radionuclide present in soil samples. Other radionuclides typically present in soil samples included Co-60, Sr-90, Eu-152, Eu-154, Pu-238, Pu-239/240, and Am-241. Cesium-137 was used as a surrogate for the other radionuclides present in surface soil because it typically results in 64 percent of the total activity in surface soil samples. The surrogate relationship between Cs-137 and other radionuclides present in surface soil samples is presented in Table 2 based on data collected from March through September 2000.

Table 2. Cs-137 Surrogate Radionuclide Ratios

Radionuclide	Cs-137/Surrogate Radionuclide Ratio
Co-60	381
Sr-90	46
Eu-152	17
Eu-154	182
Pu-238	800
Pu-239/240	25
Pu-241	2.8
Am-241	15

Note: The Cs-137/Pu-241 ratio was obtained from ORIGEN2.1 data.

Tables 3 through 5 list the concentrations of Cs-137 in surface soil used for the WJN Site dose assessment. Data are organized by Final Status Survey report and represent the average Cs-137 concentrations within the 10 meter × 10 meter grids assessed in each Final Status Survey report.

Over the WJN Site (Table 3), the average Cs-137 concentration in surface soil grids was 0.20 pCi/g and the maximum concentration in surface soil grids was 2.55 pCi/g. In the Upper Area (Table 4), the average Cs-137 concentration in surface soil grids was 0.14 pCi/g and the maximum concentration in surface soil grids was 1.21 pCi/g. In the Filter Bed Area, the average Cs-137 concentration in surface soil grids was 0.29 pCi/g and the maximum concentration in surface soil grids was 2.55 pCi/g. The maximum concentrations represent the maximum averages for grids in these areas and do not represent the maximum Cs-137 concentration reported in a single soil sample.

In the WJN Site dose assessment, the maximum Cs-137 concentrations and the radionuclide ratios listed in Table 2 were used to determine radionuclide concentrations and estimate radiation doses. The radionuclide concentrations are listed in Table 6 for the Upper Area and the Filter Bed Area.

For the JN-4 drainpipe area, Am-241, Pu-238, Pu-239/240, and Pu-241 were identified in surface soil samples. Table 7 lists the concentrations of these radionuclides in surface soil. In the WJN Site dose assessment, the maximum concentrations were used to estimate radiation doses.

Table 3. Cs-137 Concentrations at the WJN Site

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
1	Upper	JN-4 North Area	2000-2001 Data	0.08
			2005 Data	0.07
2	Upper	JN-2 Above Grade		Building removed, no soil data
3	Upper	JN-3 Above Grade		Building removed, no soil data
4	Upper	JN-3 Foundation Area	Excavation Base	0.16
			Overburden	0.07
5	Upper	JN-6		Building removed, no soil data
6	Upper	JN-1B Fuel Pool and Transfer Canal	Average of concrete data	1.21
7	Filter Bed	Filter Beds Including WIDE System	Filter Beds and WIDE Grounds	0.278
8	Upper	JN-2 Sanitation Line Sections B and C	Sanitation Line Trench Base	2.86E-02
			Sanitation Line Trench Sidewalls	2.20E-02
			Sanitation Line Overburden A	4.35E-02
			Sanitation Line Overburden B	3.32E-02
9	Upper	JN-1/4 Sanitary Sewer Line	Excavation Base	8.64E-02
			Excavation Sidewalls	0.1
			Overburden (Random)	0.23
			Overburden A	8.33E-02
			Overburden B	4.99E-02
10	Filter Bed	Abandoned Middle Filter Bed	Trench Base	9.00E-02
			Trench Sidewalls	1.50E-01
			AMFB Base	2.30E-01
			Overburden A	2.00E-01
			Overburden B	2.00E-02
11	Filter Bed	Manhole 7 to Manhole A Sewer Line	Excavation Base	1.10E+00
			Excavation Sidewalls	2.40E-01
			Overburden A	8.00E-02
			Overburden B	1.40E-01

Table 3. Cs-137 Concentrations at the WJN Site

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
12	Filter Bed	Active North Filter Bed, North Subsurface Sand Filter	ANFB to MH-2 Sidewalls	0.02
			ANFB to MH-2 Excavation Base	0.04
			Dosing Chamber Excavation Base	0.02
			ANFB to MH-2 Overburden A	0.03
			ANFB to MH-2 Overburden B	0.05
13	Filter Bed	Active North Filter Bed, South Subsurface Sand Filter		Surface data only, no soil data
14	Filter Bed	Grids 33, 42, 50, 51, 52, and 61 of the Abandoned North Filter Bed		1.3
15	Filter Bed	Manhole 7 to Manhole 8 Sewer Line	Excavation Base	0.02
			Excavation Sidewalls	0.08
			Overburden A	0.04
			Overburden B	0.04
16	Filter Bed	Active North Filter Bed Discharge Line	Excavation Base, Section A	0.04
			Excavation Base, Section B	0.21
			Excavation Base, Section C	0.73
			Excavation Base, Section D	0.15
			Excavation Sidewall, Section A	0.14
			Excavation Sidewall, Section B	0.16
			Excavation Sidewall, Section C	0.22
			Excavation Sidewall, Section D	0.16
			Section A, Overburden A	0.09
			Section A, Overburden B	0.12
			Section B, Overburden A	0.28
			Section B, Overburden B	0.13
			Section C, Overburden A	0.18
			Section D, Overburden A	0.49

Table 3. Cs-137 Concentrations at the WJN Site

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
			Section D, Overburden B	0.22
17	Upper	Dam Line	Stabilized Pipe	1.0629
19	Upper	JN-2 Foundation Area and Sanitary Line	JN-2 Foundation	6.69E-02
			Sanitary Line Trench Base	3.16E-02
			Sanitary Line Trench Sidewalls	3.84E-02
			Sanitary Line Overburden A	5.50E-02
			Sanitary Line Overburden B	3.73E-02
20	Upper	JN-1 Well House	Roofing Materials	2.28E-02
				2.14E-02
22	Upper	Remaining Land Areas Inside WJN Fenceline	AA-1	0.17
			AA-2	0.1
			AA-3	0.05
			AA-4	0.08
			Section A	0.05
			Section B	0.03
			Section C	0.06
			Section D	0.04
			Section E	0.13
			Section F	0.13
			JN-2/3 Footprint	0.041
			JN-1 Footprint	0.17
23	Upper	Unaffected Land Areas Outside WJN Fenceline	SR 142 Access Road	0.0593
			Southwest of JN-10	0.121
			Outside WJN Perimeter Fence	0.146
			Filter Bed Access Road	0.043
			North Outside Filter Bed Fence	0.186
			South Outside Filter Bed Fence	0.144

Table 3. Cs-137 Concentrations at the WJN Site

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
24	Filter Bed	Areas Including and Surrounding the AMFB	Average of Table 7 data	2.55
25	Upper	JN-1-4 Bog Area and Outfall #6	Bog Area	0.353
			Average of Outfall #6 data	6.19E-02
26	Upper	JN-2 Sanitation Line Section A	Sanitation Line Trench Base Section A	0.03
			Sanitation Line Trench Sidewalls Section A	0.08
27	Upper	JN-1 South and East Grounds	JN-1 South and East Grounds and Excavation	0.4
28	Upper	JN-1 A and C Foundation Excavation	JN-1 South and West Grounds and Excavation	0.57
29	Upper	JN-1 B Foundation Excavation	JN-1 B Foundation	0.66
30	Upper	Chemical Waste Sewer Line, West Section	Excavation Base	3.44E-03
			Excavation Sidewalls	-5.31E-03
			Overburden A Soils	2.01E-02
			Overburden B Soils	-3.35E-03
31	Upper	Chemical Waste Sewer Line, East Section	Excavation Base	-1.21E-03
			Excavation Sidewalls	8.97E-03
			Overburden A Soils	1.15E-02
			Overburden B Soils	1.41E-02
32	Upper	TRU Waste Staging Pad	TRU Waste Pad Area	0.16
--[a]	Filter Bed	North Abandoned Discharge Pipe	Table 5	8.35E-02
			Table 11	9.75E-01
			Average	**0.20**
			Maximum	**2.55**

a. FSS not assigned a number.

Table 4. Cs-137 Concentrations at the WJN Site Upper Areas

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
1	Upper	JN-4 North Area	2000-2001 Data	0.08
			2005 Data	0.07
2	Upper	JN-2 Above Grade		Building removed, no soil data
3	Upper	JN-3 Above Grade		Building removed, no soil data
4	Upper	JN-3 Foundation Area	Excavation Base	0.16
			Overburden	0.07
5	Upper	JN-6		Building removed, no soil data
6	Upper	JN-1B Fuel Pool and Transfer Canal	Average of concrete data	1.21
8	Upper	JN-2 Sanitation Line Sections B and C	Sanitation Line Trench Base	2.86E-02
			Sanitation Line Trench Sidewalls	2.20E-02
			Sanitation Line Overburden A	4.35E-02
			Sanitation Line Overburden B	3.32E-02
9	Upper	JN-1/4 Sanitary Sewer Line	Excavation Base	8.64E-02
			Excavation Sidewalls	0.1
			Overburden (Random)	0.23
			Overburden A	8.33E-02
			Overburden B	4.99E-02
17	Upper	Dam Line	Stabilized Pipe	1.0629
19	Upper	JN-2 Foundation Area and Sanitary Line	JN-2 Foundation	6.69E-02
			Sanitary Line Trench Base	3.16E-02
			Sanitary Line Trench Sidewalls	3.84E-02
			Sanitary Line Overburden A	5.50E-02
			Sanitary Line Overburden B	3.73E-02
20	Upper	JN-1 Well House	Roofing Materials	2.28E-02
				2.14E-02

Table 4. Cs-137 Concentrations at the WJN Site Upper Areas

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
22	Upper	Remaining Land Areas Inside WJN Fenceline	AA-1	0.17
			AA-2	0.1
			AA-3	0.05
			AA-4	0.08
			Section A	0.05
			Section B	0.03
			Section C	0.06
			Section D	0.04
			Section E	0.13
			Section F	0.13
			JN-2/3 Footprint	0.041
			JN-1 Footprint	0.17
23	Upper	Unaffected Land Areas Outside WJN Fenceline	SR 142 Access Road	0.0593
			Southwest of JN-10	0.121
			Outside WJN Perimeter Fence	0.146
			Filter Bed Access Road	0.043
			North Outside Filter Bed Fence	0.186
			South Outside Filter Bed Fence	0.144
25	Upper	JN-1-4 Bog Area and Outfall #6	Bog Area	0.353
			Average of Outfall #6 data	6.19E-02
26	Upper	JN-2 Sanitation Line Section A	Sanitation Line Trench Base Section A	0.03
			Sanitation Line Trench Sidewalls Section A	0.08
27	Upper	JN-1 South and East Grounds	JN-1 South and East Grounds and Excavation	0.4
28	Upper	JN-1 A and C Foundation Excavation	JN-1 South and West Grounds and Excavation	0.57
29	Upper	JN-1 B Foundation Excavation	JN-1 B Foundation	0.66

Table 4. Cs-137 Concentrations at the WJN Site Upper Areas

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
30	Upper	Chemical Waste Sewer Line, West Section	Excavation Base	3.44E-03
			Excavation Sidewalls	-5.31E-03
			Overburden A Soils	2.01E-02
			Overburden B Soils	-3.35E-03
31	Upper	Chemical Waste Sewer Line, East Section	Excavation Base	-1.21E-03
			Excavation Sidewalls	8.97E-03
			Overburden A Soils	1.15E-02
			Overburden B Soils	1.41E-02
32	Upper	TRU Waste Staging Pad	TRU Waste Pad Area	0.16
			Average	**0.14**
			Maximum	**1.21**

Table 5. Cs-137 Concentrations at the WJN Site Filter Bed Areas

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
7	Filter Bed	Filter Beds Including WIDE System	Filter Beds and WIDE Grounds	0.278
10	Filter Bed	Abandoned Middle Filter Bed	Trench Base	9.00E-02
			Trench Sidewalls	1.50E-01
			AMFB Base	2.30E-01
			Overburden A	2.00E-01
			Overburden B	2.00E-02
11	Filter Bed	Manhole 7 to Manhole A Sewer Line	Excavation Base	1.10E+00
			Excavation Sidewalls	2.40E-01
			Overburden A	8.00E-02
			Overburden B	1.40E-01
12	Filter Bed	Active North Filter Bed, North Subsurface Sand Filter	ANFB to MH-2 Sidewalls	0.02
			ANFB to MH-2 Excavation Base	0.04
			Dosing Chamber Excavation Base	0.02
			ANFB to MH-2 Overburden A	0.03
			ANFB to MH-2 Overburden B	0.05
13	Filter Bed	Active North Filter Bed, South Subsurface Sand Filter		Surface data only, no soil data
14	Filter Bed	Grids 33, 42, 50, 51, 52, and 61 of the Abandoned North Filter Bed		1.3
15	Filter Bed	Manhole 7 to Manhole 8 Sewer Line	Excavation Base	0.02
			Excavation Sidewalls	0.08
			Overburden A	0.04
			Overburden B	0.04

Table 5. Cs-137 Concentrations at the WJN Site Filter Bed Areas

FSS File	Area	Title	Location	Cs-137 Concentration (pCi/g)
16	Filter Bed	Active North Filter Bed Discharge Line	Excavation Base, Section A	0.04
			Excavation Base, Section B	0.21
			Excavation Base, Section C	0.73
			Excavation Base, Section D	0.15
			Excavation Sidewall, Section A	0.14
			Excavation Sidewall, Section B	0.16
			Excavation Sidewall, Section C	0.22
			Excavation Sidewall, Section D	0.16
			Section A, Overburden A	0.09
			Section A, Overburden B	0.12
			Section B, Overburden A	0.28
			Section B, Overburden B	0.13
			Section C, Overburden A	0.18
			Section D, Overburden A	0.49
			Section D, Overburden B	0.22
24	Filter Bed	Areas Including and Surrounding the AMFB	Average of Table 7 data	2.55
--[a]	Filter Bed	North Abandoned Discharge Pipe	Table 5	8.35E-02
			Table 11	9.75E-01
			Average	**0.29**
			Maximum	**2.55**

a. FSS not assigned a number.

Table 6. Radionuclide Concentrations Used in WJN Site Dose Assessment

Radionuclide	Concentration in Upper Area (pCi/g)	Concentration in Filter Bed Area (pCi/g)
Cs-137	1.21	2.55
Co-60	3.18E-3	6.69E-3
Sr-90	2.63E-2	5.54E-2
Eu-152	7.12E-2	1.50E-1
Eu-154	6.65E-3	1.40E-2
Pu-238	1.51E-3	3.19E-3
Pu-239/240	4.84E-2	1.02E-1
Pu-241	4.32E-1	9.11E-1
Am-241	8.07E-2	1.70E-1

Table 7. Radionuclide Concentrations in JN-4 Drainpipe Area

Location	Pu-238 Concentration (pCi/g)	Pu-239/240 Concentration (pCi/g)	Pu-241 Concentration (pCi/g)	Am-241 Concentration (pCi/g)
Excavation Sidewalls[a]	0.033	0.900	0.720	0.396
Excavation East/West Base[a]	0.012	0.159	0.126	0.106
Excavation North/South Base[a]	0.015	0.483	0.385	0.308
Overburden East/West Trench[a]	0.012	0.389	0.312	0.234
Overburden North/South Trench[a]	0.035	1.21	0.970	0.400
Base of Trench[b]	0.074	3.14	2.52	3.7
Average	0.030	1.047	0.839	0.857
Maximum	0.074	3.14	2.52	3.7

a. Source: Final Status Survey Report for JN-4 Yard and Drainpipe Removal.
b. Source: Investigatory Survey Report, JN-3 Cooling Waste Sewer Line, East Section.

4.0 Site Ground Water Model

The unconsolidated glacial deposits underlying the WJN Site are approximately 100 feet thick. These deposits overlie the regional limestone aquifer. Based on Madison County, Ohio soil surveys (Gerken and Scherzinger 1981), the surface soil at the WJN Site is Miamian silt loam, eroded Miamian silt loam, and Lewisburg-Celina silt loam. From the land surface to the limestone, the geologic deposits are very dense, over compacted glacial till consisting of 70 to 99 percent clay (Jacobsen 2006).

There are four ground water layers present at the WJN Site. There are three water bearing units within the unconsolidated material above the bedrock at the WJN Site and one shallow groundwater area. The three water bearing units consist of the 885-foot sand layer, the 855-foot sand layer, and the 805-foot limestone layer (see Figure 2). The shallow ground water layer consists of the Bog Area. The 885-foot layer is about 30 feet below land surface. The 855-foot layer is about 60 feet below land surface. The 805-foot layer is about 100 feet below land surface. The Bog Area is about 7 feet below land surface.

The ground water in the 885-foot and 855-foot layers and the Bog Area is not suitable as drinking water sources because the water yields are too low. However, it was assumed the ground water from the 885-foot layer could migrate to Battelle Lake (Silver Creek Reservoir), resulting in a potential aquatic food pathway. The water from the Bog Area was not used for this purpose because the flow in the Bog Area is essentially non-existent. The water from the

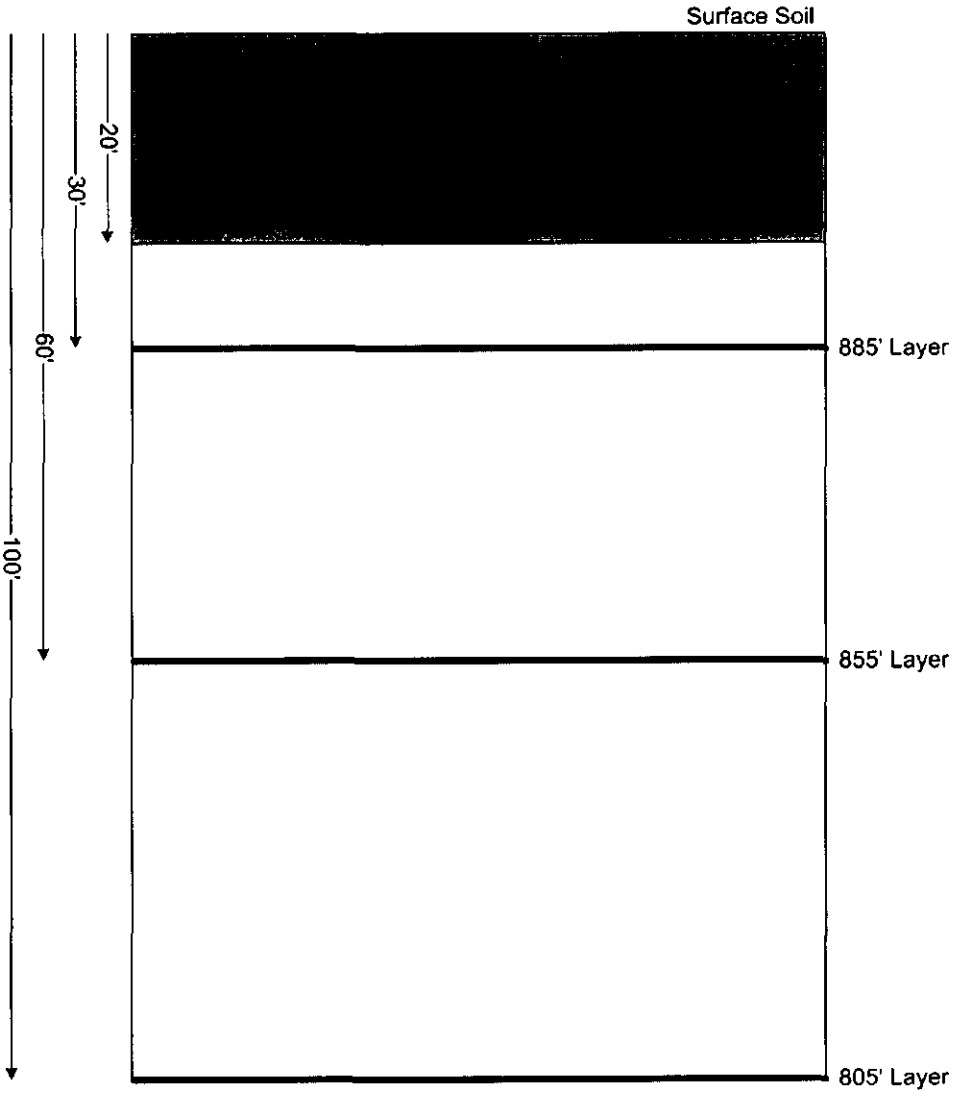

Figure 2. Ground Water Layers at the West Jefferson North Site

855-foot layer was not used for this purpose because the radionuclide travel times from the residual radioactivity in surface soil to the 855-foot layer would be longer than for the 885-foot layer, resulting in lower radiation doses.

The ground water from the 805-foot layer is suitable as a drinking water supply, and for irrigating crops and watering stock.

Detailed radiological analyses have not been performed for water samples from the 805-foot layer. However, gross beta measurements have been performed for samples from the 805-foot layer. These gross beta measurements ranged from 35 to 70 pCi/L (Jacobsen 2006).

Detailed radiological analyses have been performed on water samples taken from the JN-1B East and West caisson wells in December 2005 (see Table 8). Strontium-90 was detected in both wells. To estimate the Sr-90 concentration in the 805-foot layer well water, the Sr-90/gross beta ratio was determined using the data from the caisson wells. Using the gross beta measurements from the 805-foot layer well water and the Sr-90/gross beta ratio, the concentration of Sr-90 in the 805-foot layer well water was estimated to be 22 pCi/L:

Sr-90 concentration in 805-foot layer (pCi/L) = Gross beta concentration in 805-foot layer (pCi/L)

× Sr-90/Gross Beta Ratio

22 pCi/L Sr-90 = 70 pCi/L Gross Beta × 0.314

The Sr-90/gross beta ratio will be verified using data collected during the planned ground water monitoring expected to be completed in August-September 2006.

Table 8. Sr-90/Gross Beta Ratio for JN-1B East and West Caisson Wells

Well	Sr-90 Concentration (pCi/L)	Gross Beta Concentration (pCi/L)	Sr-90/Gross Beta Ratio
JN-1B East Caisson Well[a]	56.9	175	0.325
JN-1B West Caisson Well[b]	57.9	191	0.303
Average			0.314

a. Sample R3772-01
b. Sample R3772-02

5.0 Exposure Scenario

Because the goal of the WJN Site dose assessment was an unrestricted release of the WJN Site, a residential farmer scenario was used to estimate radiation doses from the residual radioactivity

present in surface soil at the WJN Site. In addition, no cover was assumed to exist over the surface soil. The following pathways were considered:

- External gamma
- Inhalation
- Plant ingestion
- Meat ingestion
- Aquatic foods
- Drinking water
- Soil ingestion

The residential farmer was assumed to live on the WJN Site and grow a significant portion of their food on the site. The farmer was also assumed to use water from the 805-foot layer for drinking water, irrigating crops, and watering stock. For the aquatic foods pathway, water was assumed to move through the WJN Site to the 885-foot layer and then discharge to Battelle Lake. Battelle Lake was assumed to be the location of the aquatic food pathway because the watershed area associated with Battelle Lake, about 2.1 square miles or 1,344 acres (Ohio DNR 1987), is much less than the Big Darby Creek sub-watershed areas north of the WJN Site. For example, the Upper Big Darby Creek sub-watershed has an area of about 113,000 acres and the Upper Middle Big Darby Creek sub-watershed has an area of about 40,000 acres (Ohio EPA 2006). Figure 3 illustrates the exposure pathways at the WJN Site.

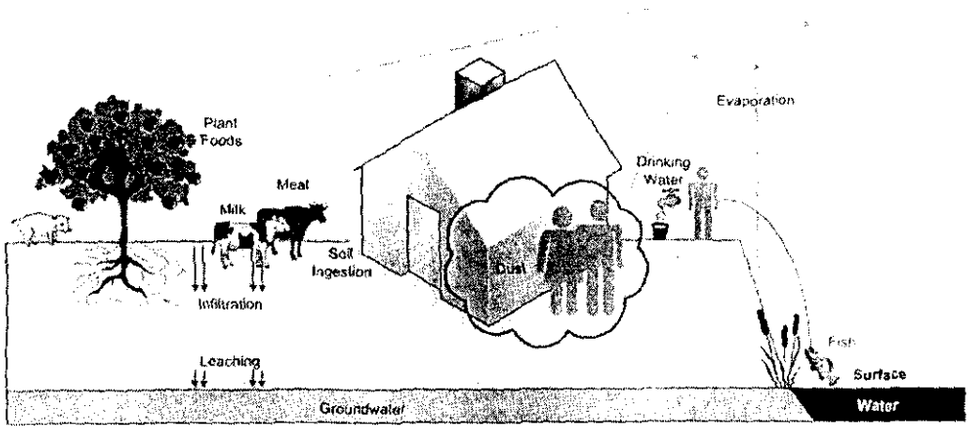

Figure 3. Exposure Pathways at the West Jefferson North Site

The radiation doses through the exposure pathways illustrated in Figure 3 were estimated using the RESRAD computer code (Yu et al. 2001). Radiation doses were estimated from the time of site closure (0 years) to 1,000 years after site closure. Default parameters for the residential farmer scenario were used, except for cases were changes were necessary to model conditions at the WJN Site. These changes are listed in Table 9. In addition, the fraction of aquatic food and plant food grown on the WJN Site was assumed to be 1.0.

Table 9. WJN Site Parameter Values

Parameter	WJN Site Value	Comment
Upper Area		
Area of contaminated zone (m^2)	79,300	Site geometry
Thickness of contaminated zone (m)	6.1	Site geometry
Length parallel to aquifer flow (m)	282	Site geometry
Cover depth (m)	0	Unrestricted release
Contaminated zone erosion rate (m/yr)	0	
Contaminated zone total porosity	0.40	Representative of silt (Yu et al. 1993)
Contaminated zone field capacity	0.20	Representative of silt (Yu et al. 1993)
Contaminated zone hydraulic conductivity (m/yr)	227	Representative of silt-loam (Yu et al. 1993)
Contaminated zone b parameter	5.3	Representative of silt-loam (Yu et al. 1993)
Watershed area for nearby stream or pond (m^2)	5,440,000	Area of Battelle Lake watershed
Precipitation (m/yr)	0.97	
Contamination fraction of plant food	1.0	
Contamination fraction of aquatic food	1.0	
Filter Bed Area		
Area of contaminated zone (m^2)	51,400	Site geometry
Thickness of contaminated zone (m)	6.1	Site geometry
Length parallel to aquifer flow (m)	227	Site geometry
Cover depth (m)	0	Unrestricted release
Contaminated zone erosion rate (m/yr)	0	
Contaminated zone total porosity	0.40	Representative of silt (Yu et al. 1993)
Contaminated zone field capacity	0.20	Representative of silt (Yu et al. 1993)
Contaminated zone hydraulic conductivity (m/yr)	227	Representative of silt-loam (Yu et al. 1993)
Contaminated zone b parameter	5.3	Representative of silt-loam (Yu et al. 1993)
Watershed area for nearby stream or pond (m^2)	5,440,000	Area of Battelle Lake watershed
Precipitation (m/yr)	0.97	
Contamination fraction of plant food	1.0	
Contamination fraction of aquatic food	1.0	
JN-4 Drainpipe Area		
Area of contaminated zone (m^2)	64.9	Site geometry
Thickness of contaminated zone (m)	0.1524	Site geometry
Length parallel to aquifer flow (m)	8.1	Site geometry
Cover depth (m)	0	Unrestricted release
Contaminated zone erosion rate (m/yr)	0	
Contaminated zone total porosity	0.40	Representative of silt (Yu et al. 1993)

Table 9. WJN Site Parameter Values

Parameter	WJN Site Value	Comment
Contaminated zone field capacity	0.20	Representative of silt (Yu et al. 1993)
Contaminated zone hydraulic conductivity (m/yr)	227	Representative of silt-loam (Yu et al. 1993)
Contaminated zone b parameter	5.3	Representative of silt-loam (Yu et al. 1993)
Watershed area for nearby stream or pond (m^2)	5,440,000	Area of Battelle Lake watershed
Precipitation (m/yr)	0.97	
Contamination fraction of plant food	1.0	
Contamination fraction of aquatic food	1.0	
805-foot layer (Saturated Zone)		
Saturated zone total porosity	0.30	Representative of limestone (Yu et al. 1993)
Saturated zone effective porosity	0.14	Representative of limestone (Yu et al. 1993)
Saturated zone field capacity	0.16	Representative of limestone (Yu et al. 1993)
Saturated zone hydraulic conductivity (m/yr)	30	On-site slug tests (Jacobsen 2006)
Saturated zone hydraulic gradient	0.02	RESRAD default
Saturated zone b parameter	5.3	RESRAD default
Nondispersion or mass balance model	Mass Balance	Yields higher radiation doses
885-foot Layer (Saturated Zone)		
Saturated zone total porosity	0.43	Representative of sand (Yu et al. 1993)
Saturated zone effective porosity	0.33	Representative of sand (Yu et al. 1993)
Saturated zone field capacity	0.10	Representative of sand (Yu et al. 1993)
Saturated zone hydraulic conductivity (m/yr)	30	On-site slug tests (Jacobsen 2006)
Saturated zone hydraulic gradient	0.02	RESRAD default
Saturated zone b parameter	4.05	Representative of sand (Yu et al. 1993)
Nondispersion or mass balance model	Mass Balance	Yields higher radiation doses
Unsaturated Zone		
Thickness of unsaturated zone (m)	24.4	Transport to 805-foot layer
Thickness of unsaturated zone (m)	3.05	Transport to 885-foot layer
Unsaturated zone total porosity	0.40	RESRAD default
Unsaturated zone effective porosity	0.20	RESRAD default
Unsaturated zone field capacity	0.20	RESRAD default
Unsaturated zone b parameter	10.4	Representative of sand clay or silt clay (Yu et al. 1993)
Unsaturated zone hydraulic conductivity (m/yr)	30	On-site slug tests (Jacobsen 2006)

6.0 Results

Table 10 presents the radiation doses from residual radioactivity at the WJN Site. Also listed in Table 10 are the attachment numbers and file names associated with the RESRAD computer code output.

For the Upper Area, the peak radiation dose was estimated to be 4.0 mrem/yr. The majority of the radiation dose was from external exposure to Cs-137 in surface soil and the aquatic food pathway did not contribute significantly to the radiation dose.

For the Filter Bed Area, the peak radiation dose was estimated to be 8.4 mrem/yr. As with the Upper Area, the majority of the radiation dose was from external exposure to Cs-137 in surface soil.

For the JN-4 Drainpipe Area, the peak radiation dose was estimated to be 13.1 mrem/yr. The majority of the radiation dose was from the drinking water pathway and as with the Upper Area and Filter Bed Area, the aquatic food pathway did not contribute significantly to the radiation dose. Americium-241 was the most important radionuclide for the drinking water pathway.

For the Upper Area and the Filter Bed Area, the peak dose occurred immediately after closure. This is to be expected because of the relatively short half-life of Cs-137, 30 years. For the JN-4 Drainpipe Area, the peak dose occurred at 781 years after closure. This was due to the time it took Am-241 to migrate from the surface soil to a well located in the 805-foot layer.

As discussed in Section 4, the 805-foot layer was estimated to have a Sr-90 concentration of 22 pCi/L. This radionuclide concentration cannot be used directly by RESRAD to estimate radiation doses through the ground water pathway. Therefore, the following equation was used to estimate the radiation dose:

$$\text{Sr-90 Radiation Dose (mrem/yr)} = \text{Estimated Sr-90 Concentration (pCi/L)} \times \frac{\text{Sr-90 Radiation Dose from RESRAD (mrem/yr)}}{\text{Sr-90 Well Water Concentration from RESRAD (pCi/L)}}$$

The Sr-90 radiation dose from RESRAD was from Attachment 7 (year 300), and is the sum of the radiation doses through the water dependent drinking water, plant, meat, and milk pathways. The Sr-90 well water concentration from RESRAD was from Attachment 8 (year 300). The Sr-90 radiation dose through the ground water pathway was estimated to be 2.433 mrem/yr:

Table 10. West Jefferson North Site Radiation Doses

Area	Radiation Dose (mrem/yr)				Attachment
	0 Years	100 Years	114 Years	781 Years	
Upper Area					
Upper Area (no aquatic food)[a]	3.995	4.345E-1	3.348E-1	2.391	Attachment 1 (upper_areas.sum)
Upper Area (aquatic food only)[b]	0	1.928E-1	1.972E-1	1.383E-2	Attachment 2 (upper_areas_aquatic.sum)
Total Upper Area	4.0	0.63	0.53	2.4	
Filter Bed Area					
Filter Bed Area (no aquatic food)[a]	8.354	9.097E-1	7.010E-1	5.037	Attachment 3 (filter_bed_areas.sum)
Filter Bed Area (aquatic food only)[b]	0	2.633E-1	2.693E-1	1.888E-2	Attachment 4 filter_bed_areas_aquatic.sum
Total Filter Bed Area	8.4	1.2	0.97	5.1	
JN-4 Drainpipe Area					
JN-4 Drainpipe Area (no aquatic food)[c]	1.007	3.947E-1	3.882E-1	1.309E+1	Attachment 5 (JN-4_drainpipe.sum)
JN-4 Drainpipe Area (aquatic food only)[d]	0	6.816E-3	1.610E-3	1.184E-9	Attachment 6 (JN-4_drainpipe_aquatic.sum)
Total JN-4 Drainpipe Area	1.0	0.40	0.39	13.1	
Ground Water					
805-foot Layer Ground Water[e]	2.433	2.433	2.433	2.433	Attachment 7 (Sr-90_all-pathways_water.sum) Attachment 8 (Sr-90_all-pathways_water.con)
Individual Areas with Ground Water					
Total Upper Area with Ground Water[a]	6.4	3.1	3.0	4.8	
Total Filter Bed Area with Ground Water[b]	10.8	3.6	3.4	7.5	
Total JN-4 Drainpipe Area with Ground Water	3.4	2.8	2.8	15.5	

Table 10. West Jefferson North Site Radiation Doses

Area	Radiation Dose (mrem/yr)				Attachment
	0 Years	100 Years	114 Years	781 Years	
Combined Upper Area and Filter Bed Area					
Combined Upper Area and Filter Bed Area (no aquatic food)	8.466	9.204E-1	7.090E-1	5.037	Attachment 9 (combined_upper_areas_and_filter_bed_areas_.sum)
Combined Upper Area and Filter Bed Area (aquatic food only)	0	6.711E-1	6.864E-1	4.812E-2	Attachment 10 (combined_upper_areas_and_filter_bed_areas_aquatic.sum)
Total Combined Upper Area and Filter Bed Area	8.5	1.6	1.4	5.1	
Total Combined Upper Area and Filter Bed Area with Ground Water					
Total Combined Upper Area and Filter Bed Area	8.5	1.6	1.4	5.1	
805-foot Layer Ground Water	2.433	2.433	2.433	2.433	Attachment 7 (Sr-90_all-pathways_water.sum) Attachment 8 (Sr-90_all-pathways_water.con)
Total Combined Upper Area and Filter Bed Area with Ground Water	10.9	4.0	3.8	7.5	
Total Combined Upper Area and Filter Bed Area and Total JN-4 Drainpipe Area with Ground Water					
Total Combined Upper Area and Filter Bed Area	8.5	1.6	1.4	5.1	
Total JN-4 Drainpipe Area	1.0	0.40	0.39	13.1	
805-foot Layer Ground Water	2.433	2.433	2.433	2.433	
Total	11.9	4.4	4.2	20.6	

a. Peak radiation dose immediately after closure (0 years)
b. Peak radiation dose at 114 years after closure.
c. Peak radiation dose at 781 years after closure.
d. Peak radiation dose at 100 years after closure.
e. The radiation dose through ground water was assumed to remain constant over the period of the WJN Site dose assessment.

3.474E-2 (drinking water) + 5.758E-3 (plants) + 5.983E-3 (meat) + 3.266E-3 (milk)

= 4.975E-2 mrem/yr

$$22 \text{ pCi/L} \times \frac{4.975\text{E-2 mrem/yr}}{4.497\text{E-1 pCi/L}} = 2.433 \text{ mrem/yr}$$

When the radiation doses from ground water were combined with the radiation doses from the Upper Area, the total radiation dose was estimated to be 6.4 mrem/yr (see Table 10). For the Filter Bed Area, the total radiation dose was estimated to be 10.8 mrem/yr and for the JN-4 Drainpipe Area, the total radiation dose was estimated to be 15.5 mrem/yr.

An additional analysis was performed to determine the radiation doses if the Upper Area and the Filter Bed Area were combined. The combined areas of the Upper Area and the Filter Bed Area was 131,000 m^2. The Filter Bed Area radionuclide concentrations were slightly higher than the radionuclide concentrations in the Upper Area (see Table 6), so the Filter Bed Area radionuclide concentrations were assumed to be present over the combined area of 131,000 m^2.

The peak radiation dose from this combined area was 8.5 mrem/yr. As with the previous analyses of the Upper Area and the Filter Bed Area, the majority of the radiation dose was from external exposure to Cs-137 in surface soil. The peak radiation dose occurred immediately after closure. With ground water included, the radiation dose from the combined area was estimated to be 10.9 mrem/yr.

To determine the total radiation dose from the WJN Site, the radiation doses from the combined Upper Area and the Filter Bed Area, the JN-4 Drainpipe Area, and the ground water were added. The peak radiation dose was 20.6 mrem/yr in the year 781.

7.0 Summary

A dose assessment was conducted for the residual radioactivity at the WJN Site. Using maximum radionuclide concentrations in conjunction with a resident farmer scenario and the RESRAD computer code yielded a radiation dose of 20.6 mrem/yr through all exposure pathways. This radiation dose is below the 25 mrem/yr unrestricted release standard from 10 CFR Part 20.

The radiation dose of 20.6 mrem/yr represents a conservative estimate for several reasons:

- Maximum surface soil concentrations were used to estimate radionuclide concentrations. Using average concentrations would reduce the radiation doses by a factor of about 70 percent, to about 6 mrem/yr.

- The entire WJN Site was assumed to contain residual radioactivity at the maximum

radionuclide concentrations. In reality, a substantial portion of the WJN Site would not contain residual radioactivity at these levels.

- A resident farmer scenario was used to estimate radiation doses. Although agricultural activities are common near the WJN Site, agricultural activities are not likely to occur in the Filter Bed Area because of topography. In addition, the resident farmer was assumed to get a substantial portion of their food from the WJN Site. This is also not likely to occur.

- Leaching of radionuclides from surface soil and subsequent transport to surface water and ground water was not partitioned. All the radioactivity leached from the surface soil was assumed to be transported to the 885-foot layer and then transported to surface water, exposing the resident farmer through the aquatic foods pathway. In addition, all the radioactivity leached from the surface soil was assumed to be transported to the 805-foot layer and then transported to a well, exposing the resident farmer through drinking water and other water dependent pathways. The radiation doses from these two routes of exposure were added, which overestimates the radiation dose to the resident farmer.

- The Upper Area and Filter Bed Area were assumed to contain residual radioactivity to a depth of 20 feet. In reality, residual radioactivity is not present to this depth over the entire Upper Area and Filter Bed Area.

- All residual radioactivity was assumed to be present at the surface with no cover. In reality, much of this residual radioactivity is present below the surface and is covered by clean soil or by soil with lower radionuclide concentrations.

- The radiation doses from Sr-90 in the 805-foot layer were assumed to be constant over the assessment period, which was 1,000 years. Given the half-life of Sr-90, 28.6 years, this is not likely to occur.

Based on these considerations, the actual radiation to a person who occupied the WJN Site would likely be less than 20.6 mrem/yr.

8.0 References

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ATTACHMENTS

Attachment 1. Upper Areas with No Aquatic Food (Summary File)

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Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.rad

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Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.rad

Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Co-60	2.190E-04	2.190E-04	DCF2(3)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(4)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(5)
B-1	Eu-154	2.860E-04	2.860E-04	DCF2(7)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(8)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(9)

B-1	Pa-231	1.280E+00	1.280E+00	DCF2(12)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(11)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2(12)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2(14)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(15)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(16)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(17)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(18)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(19)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(20)
B-1	U-233	1.350E-01	1.350E-01	DCF2(21)
B-1	U-234	1.320E-01	1.320E-01	DCF2(22)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(23)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Co-60	2.690E-05	2.690E-05	DCF3(3)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(4)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(5)
D-1	Eu-154	9.550E-06	9.550E-06	DCF3(7)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(8)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(9)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(10)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(11)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(12)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(14)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(15)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(16)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(17)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(18)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(19)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(20)
D-1	U-233	2.890E-04	2.890E-04	DCF3(21)
D-1	U-234	2.830E-04	2.830E-04	DCF3(22)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(23)
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)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(1,1)

D-34	Am-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34					
D-34	Co-60	, plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF(3,1)
D-34	Co-60	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF(3,2)
D-34	Co-60	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(3,3)
D-34					
D-34	Cs-137+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Cs-137+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(4,2)
D-34	Cs-137+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF 4,3)
D-34					
D-34	Eu-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	Eu-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(5,2)
D-34	Eu-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(5,3)
D-34					
D-34	Eu-154	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	Eu-154	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(7,2)
D-34	Eu-154	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(7,3)
D-34					
D-34	Gd-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF 8,1)
D-34	Gd-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF 8,2)
D-34	Gd-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(8,3)
D-34					
D-34	Np-237+D	, plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(9,1)
D-34	Np-237+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Np-237+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(9,3)
D-34					
D-34	Pa-231	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(10,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(10,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF 10,3)
D-34					
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(11,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(11,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(11,3)
D-34					
D-34	Pu-238	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Pu-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF 12,2)
D-34	Pu-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(12,3)
D-34					
D-34	Pu-239	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(14,1)
D-34	Pu-239	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Pu-239	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(14,3)
D-34					
D-34	Pu-241	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Pu-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Pu-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(15,3)
D-34					

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(16,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(18,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(18,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(18,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(19,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(19,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(19,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(3,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(4,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(5,1)

D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(5,2)
D-5				
D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC(7,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(7,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(8,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(8,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(9,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(10,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(11,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(11,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(12,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(14,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(14,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(15,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(15,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(16,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(16,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(18,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(18,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(19,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(19,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(21,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)

D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(22,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(22,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(23,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(23,2)

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

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	7.930E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	6.100E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.820E+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)	1.140E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	7.810E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	8.070E-02	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Co-60	3.180E-03	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.210E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Eu-152	7.120E-02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Eu-154	6.650E-03	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.510E-03	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Pu-239	4.840E-02	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Pu-241	4.320E-01	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Sr-90	2.630E-02	0.000E+00	---	S1(18)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(18)
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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Watershed area for nearby stream or pond (m**2)	5.440E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.600E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	2.440E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.644E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.332E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.159E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)

R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(18)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU(18,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS(18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.768E-03	ALEACH(18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(18)
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	2.644E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

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 Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.070E-04	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.043E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for daughter Pb-210				

R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.324E-04	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.601E-04	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)

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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(23)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(23,1)

R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(23)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	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	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-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)
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)

R018	Meat and poultry consumption (kg/yr)	6.300E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	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)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

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

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 14
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.rad

Contaminated Zone Dimensions

Area: 79300.00 square meters
Thickness: 6.10 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Am-241	8.070E-02
Co-60	3.180E-03
Cs-137	1.210E+00
Eu-152	7.120E-02
Eu-154	6.650E-03
Pu-238	1.510E-03
Pu-239	4.840E-02
Pu-241	4.320E-01
Sr-90	2.630E-02

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
TDOSE(t):	3.995E+00	3.893E+00	3.698E+00	3.104E+00	1.928E+00	4.345E-01	3.348E-01	6.129E-02	2.391E+00	1.209E+00
M(t):	1.598E-01	1.557E-01	1.479E-01	1.242E-01	7.714E-02	1.738E-02	1.339E-02	2.452E-03	9.564E-02	4.836E-02

Maximum TDOSE(t): 3.995E+00 mrem/yr at t = 0.000E+00 years
RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 15
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.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-	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.

Am-241	2.100E-03	0.0005	2.821E-03	0.0007	0.000E+00	0.0000	5.108E-02	0.0128	5.249E-04	0.0001	2.995E-05	0.0000	8.024E-03	0.0020
Co-60	2.820E-02	0.0071	5.149E-08	0.0000	0.000E+00	0.0000	1.116E-03	0.0003	6.000E-04	0.0002	7.227E-05	0.0000	2.194E-06	0.0000
Cs-137	2.380E+00	0.5958	3.011E-06	0.0000	0.000E+00	0.0000	4.163E-01	0.1042	3.640E-01	0.0911	1.189E-01	0.0298	1.637E-03	0.0004
Eu-152	2.841E-01	0.0711	1.210E-06	0.0000	0.000E+00	0.0000	1.957E-04	0.0000	3.798E-05	0.0000	1.319E-06	0.0000	1.231E-05	0.0000
Eu-154	2.868E-02	0.0072	1.443E-07	0.0000	0.000E+00	0.0000	2.658E-05	0.0000	5.159E-06	0.0000	1.792E-07	0.0000	1.672E-06	0.0000
Pu-238	1.363E-07	0.0000	4.652E-05	0.0000	0.000E+00	0.0000	8.387E-04	0.0002	1.723E-05	0.0000	2.459E-07	0.0000	1.318E-04	0.0000
Pu-239	8.436E-06	0.0000	1.638E-03	0.0004	0.000E+00	0.0000	2.986E-02	0.0075	6.135E-04	0.0002	8.753E-06	0.0000	4.690E-03	0.0012
Pu-241	1.360E-05	0.0000	2.865E-04	0.0001	0.000E+00	0.0000	5.243E-03	0.0013	1.057E-04	0.0000	1.600E-06	0.0000	8.237E-04	0.0002
Sr-90	3.734E-04	0.0001	2.681E-06	0.0000	0.000E+00	0.0000	2.071E-01	0.0519	4.181E-02	0.0105	1.241E-02	0.0031	1.086E-04	0.0000
Total	2.723E+00	0.6818	4.800E-03	0.0012	0.000E+00	0.0000	7.118E-01	0.1782	4.077E-01	0.1021	1.314E-01	0.0329	1.543E-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 = 0.000E+00 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.458E-02	0.0162
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.999E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.281E+00	0.8213
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.844E-01	0.0712
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.871E-02	0.0072
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.035E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.682E-02	0.0092
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.474E-03	0.0016
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.618E-01	0.0655
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.995E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 16
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.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-	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.
Am-241	2.091E-03	0.0005	2.809E-03	0.0007	0.000E+00	0.0000	5.087E-02	0.0131	5.227E-04	0.0001	2.983E-05	0.0000	7.990E-03	0.0021
Co-60	2.473E-02	0.0064	4.514E-08	0.0000	0.000E+00	0.0000	9.782E-04	0.0003	5.260E-04	0.0001	6.336E-05	0.0000	1.924E-06	0.0000
Cs-137	2.326E+00	0.5974	2.942E-06	0.0000	0.000E+00	0.0000	4.068E-01	0.1045	3.557E-01	0.0914	1.161E-01	0.0298	1.600E-03	0.0004
Eu-152	2.697E-01	0.0693	1.148E-06	0.0000	0.000E+00	0.0000	1.858E-04	0.0000	3.605E-05	0.0000	1.252E-06	0.0000	1.168E-05	0.0000
Eu-154	2.650E-02	0.0068	1.334E-07	0.0000	0.000E+00	0.0000	2.457E-05	0.0000	4.768E-06	0.0000	1.656E-07	0.0000	1.545E-06	0.0000
Pu-238	1.352E-07	0.0000	4.615E-05	0.0000	0.000E+00	0.0000	8.321E-04	0.0002	1.710E-05	0.0000	2.440E-07	0.0000	1.307E-04	0.0000
Pu-239	8.435E-06	0.0000	1.638E-03	0.0004	0.000E+00	0.0000	2.985E-02	0.0077	6.135E-04	0.0002	8.753E-06	0.0000	4.690E-03	0.0012
Pu-241	3.052E-05	0.0000	2.966E-04	0.0001	0.000E+00	0.0000	5.424E-03	0.0014	1.052E-04	0.0000	1.775E-06	0.0000	8.520E-04	0.0002
Sr-90	3.640E-04	0.0001	2.613E-06	0.0000	0.000E+00	0.0000	2.019E-01	0.0519	4.075E-02	0.0105	1.210E-02	0.0031	1.059E-04	0.0000

Total	2.649E+00	0.6805	4.797E-03	0.0012	0.000E+00	0.0000	6.968E-01	0.1790	3.983E-01	0.1023	1.284E-01	0.0330	1.538E-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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.431E-02	0.0165
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.630E-02	0.0068
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.206E+00	0.8235
Eu-152	0.000E+00	0.0000	0.000E+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-01	0.0694
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.653E-02	0.0068
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.026E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-02	0.0095
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.710E-03	0.0017
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.552E-01	0.0656
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.893E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 17
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.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-	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.
Am-241	2.074E-03	0.0006	2.785E-03	0.0008	0.000E+00	0.0000	5.044E-02	0.0136	5.183E-04	0.0001	2.957E-05	0.0000	7.923E-03	0.0021
Co-60	1.901E-02	0.0051	3.470E-08	0.0000	0.000E+00	0.0000	7.519E-04	0.0002	4.043E-04	0.0001	4.870E-05	0.0000	1.479E-06	0.0000
Cs-137	2.221E+00	0.6004	2.809E-06	0.0000	0.000E+00	0.0000	3.884E-01	0.1050	3.396E-01	0.0918	1.109E-01	0.0300	1.529E-03	0.0004
Eu-152	2.431E-01	0.0657	1.035E-06	0.0000	0.000E+00	0.0000	1.674E-04	0.0000	3.248E-05	0.0000	1.128E-06	0.0000	1.053E-05	0.0000
Eu-154	2.264E-02	0.0061	1.139E-07	0.0000	0.000E+00	0.0000	2.098E-05	0.0000	4.072E-06	0.0000	1.414E-07	0.0000	1.320E-06	0.0000
Pu-238	1.331E-07	0.0000	4.543E-05	0.0000	0.000E+00	0.0000	8.190E-04	0.0002	1.683E-05	0.0000	2.403E-07	0.0000	1.287E-04	0.0000
Pu-239	8.434E-06	0.0000	1.638E-03	0.0004	0.000E+00	0.0000	2.985E-02	0.0081	6.134E-04	0.0002	8.752E-06	0.0000	4.689E-03	0.0013
Pu-241	6.181E-05	0.0000	3.152E-04	0.0001	0.000E+00	0.0000	5.755E-03	0.0016	1.040E-04	0.0000	2.099E-06	0.0000	9.040E-04	0.0002
Sr-90	3.458E-04	0.0001	2.483E-06	0.0000	0.000E+00	0.0000	1.918E-01	0.0519	3.872E-02	0.0105	1.150E-02	0.0031	1.006E-04	0.0000
Total	2.508E+00	0.6781	4.791E-03	0.0013	0.000E+00	0.0000	6.680E-01	0.1806	3.800E-01	0.1028	1.225E-01	0.0331	1.529E-02	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 = 3.000E+00 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.

Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.377E-02	0.0172
Co-60	0.000E+00	0.0000	0.000E+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-02	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.061E-00	0.8277
Eu-152	0.000E+00	0.0000	0.000E+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-01	0.0658
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.266E-02	0.0061
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.010E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.681E-02	0.0100
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.142E-03	0.0019
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.425E-01	0.0656
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.698E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 18
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.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-	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.
Am-241	2.013E-03	0.0006	2.704E-03	0.0009	0.000E+00	0.0000	4.896E-02	0.0158	5.032E-04	0.0002	2.871E-05	0.0000	7.691E-03	0.0025
Co-60	7.568E-03	0.0024	1.382E-08	0.0000	0.000E+00	0.0000	2.994E-04	0.0001	1.610E-04	0.0001	1.939E-05	0.0000	5.888E-07	0.0000
Cs-137	1.889E+00	0.6084	2.389E-06	0.0000	0.000E+00	0.0000	3.304E-01	0.1064	2.889E-01	0.0931	9.433E-02	0.0304	1.299E-03	0.0004
Eu-152	1.688E-01	0.0544	7.188E-07	0.0000	0.000E+00	0.0000	1.163E-04	0.0000	2.256E-05	0.0000	7.837E-07	0.0000	7.312E-06	0.0000
Eu-154	1.304E-02	0.0042	6.560E-08	0.0000	0.000E+00	0.0000	1.208E-05	0.0000	2.345E-06	0.0000	8.146E-08	0.0000	7.600E-07	0.0000
Pu-238	1.259E-07	0.0000	4.298E-05	0.0000	0.000E+00	0.0000	7.748E-04	0.0002	1.592E-05	0.0000	2.276E-07	0.0000	1.217E-04	0.0000
Pu-239	8.431E-06	0.0000	1.637E-03	0.0005	0.000E+00	0.0000	2.984E-02	0.0096	6.132E-04	0.0002	8.749E-06	0.0000	4.688E-03	0.0015
Pu-241	1.483E-04	0.0000	3.648E-04	0.0001	0.000E+00	0.0000	6.641E-03	0.0021	1.003E-04	0.0000	2.983E-06	0.0000	1.043E-03	0.0003
Sr-90	2.892E-04	0.0001	2.076E-06	0.0000	0.000E+00	0.0000	1.604E-01	0.0517	3.237E-02	0.0104	9.613E-03	0.0031	8.411E-05	0.0000
Total	2.081E+00	0.6702	4.754E-03	0.0015	0.000E+00	0.0000	5.774E-01	0.1860	3.227E-01	0.1039	1.040E-01	0.0335	1.494E-02	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+01 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.190E-02	0.0199
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.048E-03	0.0026
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E+00	0.8387
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.690E-01	0.0544
Eu-154	0.000E+00	0.0000	0.000E+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-02	0.0042
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.557E-04	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.679E-02	0.0119
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.301E-03	0.0027

Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.028E-01	0.0653
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.104E+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-	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.
Am-241	1.849E-03	0.0010	2.484E-03	0.0013	0.000E+00	0.0000	4.498E-02	0.0233	4.625E-04	0.0002	2.637E-05	0.0000	7.064E-03	0.0037
Co-60	5.449E-04	0.0003	9.947E-10	0.0000	0.000E+00	0.0000	2.156E-05	0.0000	1.159E-05	0.0000	1.396E-06	0.0000	4.239E-08	0.0000
Cs-137	1.190E+00	0.6169	1.505E-06	0.0000	0.000E+00	0.0000	2.081E-01	0.1079	1.819E-01	0.0943	5.942E-02	0.0308	8.183E-04	0.0004
Eu-152	5.960E-02	0.0309	2.537E-07	0.0000	0.000E+00	0.0000	4.104E-05	0.0000	7.965E-06	0.0000	2.767E-07	0.0000	2.581E-06	0.0000
Eu-154	2.694E-03	0.0014	1.356E-08	0.0000	0.000E+00	0.0000	2.497E-06	0.0000	4.847E-07	0.0000	1.683E-08	0.0000	1.571E-07	0.0000
Pu-238	1.075E-07	0.0000	3.668E-05	0.0000	0.000E+00	0.0000	6.612E-04	0.0003	1.359E-05	0.0000	1.950E-07	0.0000	1.039E-04	0.0001
Pu-239	8.422E-06	0.0000	1.636E-03	0.0008	0.000E+00	0.0000	2.981E-02	0.0155	6.125E-04	0.0003	8.739E-06	0.0000	4.682E-03	0.0024
Pu-241	2.679E-04	0.0001	4.230E-04	0.0002	0.000E+00	0.0000	7.674E-03	0.0040	9.112E-05	0.0000	4.152E-06	0.0000	1.205E-03	0.0006
Sr-90	1.734E-04	0.0001	1.245E-06	0.0000	0.000E+00	0.0000	9.618E-02	0.0499	1.941E-02	0.0101	5.764E-03	0.0030	5.044E-05	0.0000
Total	1.255E+00	0.6506	4.582E-03	0.0024	0.000E+00	0.0000	3.874E-01	0.2009	2.026E-01	0.1050	6.522E-02	0.0338	1.393E-02	0.0072

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.687E-02	0.0295
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.794E-04	0.0003
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E+00	0.8503
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.965E-02	0.0309
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.697E-03	0.0014
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.156E-04	0.0004
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.675E-02	0.0191
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.666E-03	0.0050
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.216E-01	0.0630
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.928E+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-	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.
Am-241	1.375E-03	0.0032	1.845E-03	0.0042	0.000E+00	0.0000	3.344E-02	0.0769	3.444E-04	0.0008	1.959E-05	0.0000	5.247E-03	0.0121
Co-60	5.457E-08	0.0000	9.962E-14	0.0000	0.000E+00	0.0000	2.159E-09	0.0000	1.161E-09	0.0000	1.398E-10	0.0000	4.245E-12	0.0000
Cs-137	2.358E-01	0.5428	2.984E-07	0.0000	0.000E+00	0.0000	4.125E-02	0.0949	3.607E-02	0.0830	1.178E-02	0.0271	1.622E-04	0.0004
Eu-152	1.558E-03	0.0036	6.632E-09	0.0000	0.000E+00	0.0000	1.073E-06	0.0000	2.082E-07	0.0000	7.230E-09	0.0000	6.746E-08	0.0000
Eu-154	1.081E-05	0.0000	5.441E-11	0.0000	0.000E+00	0.0000	1.002E-08	0.0000	1.945E-09	0.0000	6.756E-11	0.0000	6.303E-10	0.0000
Pu-238	6.176E-08	0.0000	2.106E-05	0.0000	0.000E+00	0.0000	3.797E-04	0.0009	7.802E-06	0.0000	1.141E-07	0.0000	5.964E-05	0.0001
Pu-239	8.391E-06	0.0000	1.629E-03	0.0037	0.000E+00	0.0000	2.969E-02	0.0683	6.101E-04	0.0014	8.705E-06	0.0000	4.664E-03	0.0107
Pu-241	2.655E-04	0.0006	3.585E-04	0.0008	0.000E+00	0.0000	6.497E-03	0.0150	6.729E-05	0.0002	3.796E-06	0.0000	1.020E-03	0.0023
Sr-90	2.895E-05	0.0001	2.078E-07	0.0000	0.000E+00	0.0000	1.606E-02	0.0370	3.241E-03	0.0075	9.624E-04	0.0022	8.421E-06	0.0000
Total	2.391E-01	0.5502	3.854E-03	0.0089	0.000E+00	0.0000	1.273E-01	0.2930	4.034E-02	0.0928	1.277E-02	0.0294	1.116E-02	0.0257

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.227E-02	0.0973
Co-60	0.000E+00	0.0000	0.000E+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-08	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.251E-01	0.7482
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.559E-03	0.0036
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.083E-05	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.683E-04	0.0011
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.661E-02	0.0843
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.212E-03	0.0189
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.030E-02	0.0467
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.345E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 21
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.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 = 1.140E+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.
Am-241	1.296E-03	0.0039	1.738E-03	0.0052	0.000E+00	0.0000	3.151E-02	0.0941	3.247E-04	0.0010	1.846E-05	0.0001	4.944E-03	0.0148
Co-60	8.651E-09	0.0000	1.579E-14	0.0000	0.000E+00	0.0000	3.422E-10	0.0000	1.840E-10	0.0000	2.217E-11	0.0000	6.730E-13	0.0000
Cs-137	1.706E-01	0.5097	2.159E-07	0.0000	0.000E+00	0.0000	2.985E-02	0.0892	2.610E-02	0.0780	8.522E-03	0.0255	1.174E-04	0.0004

Eu-152	7.514E-04	0.0022	3.199E-09	0.0000	0.000E+00	0.0000	5.175E-07	0.0000	1.004E-07	0.0000	3.488E-09	0.0000	3.255E-08	0.0000
Eu-154	3.586E-06	0.0000	1.805E-11	0.0000	0.000E+00	0.0000	3.324E-09	0.0000	6.451E-10	0.0000	2.241E-11	0.0000	2.091E-10	0.0000
Pu-238	5.529E-08	0.0000	1.885E-05	0.0001	0.000E+00	0.0000	3.398E-04	0.0010	6.983E-06	0.0000	1.026E-07	0.0000	5.337E-05	0.0002
Pu-239	8.385E-06	0.0000	1.628E-03	0.0049	0.000E+00	0.0000	2.967E-02	0.0886	6.097E-04	0.0018	8.698E-06	0.0000	4.661E-03	0.0139
Pu-241	2.516E-04	0.0008	3.387E-04	0.0010	0.000E+00	0.0000	6.139E-03	0.0183	6.343E-05	0.0002	3.592E-06	0.0000	9.635E-04	0.0029
Sr-90	2.024E-05	0.0001	1.453E-07	0.0000	0.000E+00	0.0000	1.123E-02	0.0335	2.266E-03	0.0068	6.728E-04	0.0020	5.887E-06	0.0000
Total	1.730E-01	0.5167	3.724E-03	0.0111	0.000E+00	0.0000	1.087E-01	0.3248	2.937E-02	0.0877	9.226E-03	0.0276	1.075E-02	0.0321

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.140E+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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.983E-02	0.1190
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.200E-09	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.352E-01	0.7027
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.521E-04	0.0022
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.590E-06	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.191E-04	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.658E-02	0.1093
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.760E-03	0.0232
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.419E-02	0.0424
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.348E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 22
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.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-	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.
Am-241	5.900E-04	0.0096	7.890E-04	0.0129	0.000E+00	0.0000	1.435E-02	0.2341	1.490E-04	0.0024	8.389E-06	0.0001	2.244E-03	0.0366
Co-60	2.043E-19	0.0000	3.729E-25	0.0000	0.000E+00	0.0000	8.081E-21	0.0000	4.345E-21	0.0000	9.234E-22	0.0000	1.589E-23	0.0000
Cs-137	2.316E-03	0.0378	2.930E-09	0.0000	0.000E+00	0.0000	4.051E-04	0.0066	3.542E-04	0.0058	1.157E-04	0.0019	1.593E-06	0.0000
Eu-152	4.680E-08	0.0000	1.993E-13	0.0000	0.000E+00	0.0000	3.223E-11	0.0000	6.255E-12	0.0000	2.173E-13	0.0000	2.027E-12	0.0000
Eu-154	1.537E-12	0.0000	7.735E-18	0.0000	0.000E+00	0.0000	1.425E-15	0.0000	2.765E-16	0.0000	9.604E-18	0.0000	8.961E-17	0.0000
Pu-238	1.298E-08	0.0000	4.318E-06	0.0001	0.000E+00	0.0000	7.783E-05	0.0013	1.600E-06	0.0000	2.476E-08	0.0000	1.222E-05	0.0002
Pu-239	8.302E-06	0.0001	1.611E-03	0.0263	0.000E+00	0.0000	2.936E-02	0.4791	6.034E-04	0.0099	8.609E-06	0.0001	4.613E-03	0.0753
Pu-241	1.153E-04	0.0019	1.542E-04	0.0025	0.000E+00	0.0000	2.804E-03	0.0457	2.908E-05	0.0005	1.640E-06	0.0000	4.387E-04	0.0072
Sr-90	1.740E-07	0.0000	1.249E-09	0.0000	0.000E+00	0.0000	9.653E-05	0.0016	1.948E-05	0.0003	9.785E-06	0.0001	5.062E-08	0.0000
Total	3.030E-03	0.0494	2.559E-03	0.0417	0.000E+00	0.0000	4.710E-02	0.7684	1.157E-03	0.0189	1.401E-04	0.0023	7.309E-03	0.1193

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.813E-02	0.2958
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.172E-19	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.193E-03	0.0521
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.684E-08	0.0000
Eu-154	0.000E+00	0.0000	0.000E+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-12	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.601E-05	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.621E-02	0.5908
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-03	0.0578
Sr-90	0.000E+00	0.0000	0.000E+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-04	0.0020
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.129E-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 = 7.810E+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.
Am-241	7.951E-05	0.0000	1.025E-04	0.0000	0.000E+00	0.0000	1.933E-03	0.0008	2.177E-05	0.0000	1.103E-06	0.0000	2.914E-04	0.0001
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	3.434E-08	0.0000	4.344E-14	0.0000	0.000E+00	0.0000	6.007E-09	0.0000	5.253E-09	0.0000	1.715E-09	0.0000	2.362E-11	0.0000
Eu-152	6.228E-19	0.0000	4.473E-17	0.0000	0.000E+00	0.0000	1.635E-16	0.0000	3.172E-17	0.0000	4.409E-19	0.0000	1.028E-17	0.0000
Eu-154	5.238E-29	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.855E-32	0.0000	9.423E-33	0.0000	1.000E+00	0.0000	0.000E+00	0.0000
Pu-238	2.194E-09	0.0000	9.816E-08	0.0000	0.000E+00	0.0000	1.757E-06	0.0000	3.659E-08	0.0000	3.342E-09	0.0000	2.721E-07	0.0000
Pu-239	8.089E-06	0.0000	1.569E-03	0.0007	0.000E+00	0.0000	2.859E-02	0.0120	5.875E-04	0.0002	9.382E-06	0.0000	4.491E-03	0.0019
Pu-241	1.549E-05	0.0000	2.003E-05	0.0000	0.000E+00	0.0000	3.764E-04	0.0002	4.208E-06	0.0000	1.153E-07	0.0000	5.696E-05	0.0000
Sr-90	7.924E-13	0.0000	5.689E-15	0.0000	0.000E+00	0.0000	4.395E-10	0.0000	9.872E-11	0.0000	1.634E-11	0.0000	2.305E-13	0.0000
Total	1.031E-04	0.0000	1.691E-03	0.0007	0.000E+00	0.0000	3.090E-02	0.0129	6.135E-04	0.0003	9.706E-06	0.0000	4.840E-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 = 7.810E+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.
Am-241	2.037E+00	0.8522	0.000E+00	0.0000	0.000E+00	0.0000	3.039E-01	0.1271	1.848E-03	0.0008	1.809E-04	0.0001	2.346E+00	0.9811
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.734E-08	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.513E-16	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.244E-29	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.170E-06	0.0000
Pu-239	1.313E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.942E-24	0.0000	4.816E-27	0.0000	1.174E-26	0.0000	3.525E-02	0.0147
Pu-241	8.175E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	1.185E-03	0.0005	6.339E-06	0.0000	6.902E-07	0.0000	9.841E-03	0.0041
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.556E-10	0.0000
Total	2.046E+00	0.8556	0.000E+00	0.0000	0.000E+00	0.0000	3.051E-01	0.1276	1.855E-03	0.0008	1.816E-04	0.0001	2.391E+00	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.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-	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.
Am-241	3.336E-05	0.0000	4.054E-05	0.0000	0.000E+00	0.0000	8.100E-04	0.0007	1.019E-05	0.0000	4.451E-07	0.0000	1.153E-04	0.0001
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	2.174E-10	0.0000	2.750E-16	0.0000	0.000E+00	0.0000	3.802E-11	0.0000	3.325E-11	0.0000	1.086E-11	0.0000	1.495E-13	0.0000
Eu-152	6.959E-24	0.0000	4.410E-17	0.0000	0.000E+00	0.0000	1.612E-16	0.0000	3.128E-17	0.0000	4.346E-19	0.0000	1.014E-17	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	2.899E-09	0.0000	1.910E-08	0.0000	0.000E+00	0.0000	3.385E-07	0.0000	7.389E-09	0.0000	2.453E-09	0.0000	4.936E-08	0.0000
Pu-239	7.994E-06	0.0000	1.550E-03	0.0013	0.000E+00	0.0000	2.825E-02	0.0234	5.804E-04	0.0005	8.281E-06	0.0000	4.437E-03	0.0037
Pu-241	6.465E-06	0.0000	7.922E-06	0.0000	0.000E+00	0.0000	1.570E-04	0.0001	1.948E-06	0.0000	8.674E-08	0.0000	2.253E-05	0.0000
Sr-90	2.930E-15	0.0000	2.104E-17	0.0000	0.000E+00	0.0000	1.625E-12	0.0000	3.281E-13	0.0000	8.741E-14	0.0000	8.523E-16	0.0000
Total	4.782E-05	0.0000	1.598E-03	0.0013	0.000E+00	0.0000	2.921E-02	0.0242	5.926E-04	0.0005	8.816E-06	0.0000	4.575E-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

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.
Am-241	8.495E-01	0.7027	0.000E+00	0.0000	0.000E+00	0.0000	1.306E-01	0.1081	9.100E-04	0.0008	7.962E-05	0.0001	9.821E-01	0.8124
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.996E-10	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.471E-16	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.197E-07	0.0000
Pu-239	5.364E-18	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.238E-19	0.0000	2.278E-21	0.0000	8.112E-21	0.0000	3.483E-02	0.0289
Pu-241	1.661E-01	0.1374	0.000E+00	0.0000	0.000E+00	0.0000	2.554E-02	0.0211	1.779E-04	0.0001	1.556E-05	0.0000	1.920E-01	0.1588
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.055E-12	0.0000
Total	1.016E+00	0.8400	0.000E+00	0.0000	0.000E+00	0.0000	1.562E-01	0.1292	1.088E-03	0.0009	8.519E-05	0.0001	1.209E+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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	8.003E-01	7.969E-01	7.902E-01	7.670E-01	7.045E-01	5.233E-01	4.931E-01	2.238E-01	2.907E+01	1.217E+01
Am-241	Np-237+D	1.000E+00	2.553E-06	7.943E-06	1.871E-05	5.563E-05	1.550E-04	4.401E-04	4.870E-04	8.895E-04	1.097E-03	1.221E-03
Am-241	U-233	1.000E+00	5.998E-14	3.356E-13	1.557E-12	1.274E-11	1.008E-10	9.560E-10	1.210E-09	6.070E-09	2.007E-08	7.274E-08
Am-241	Th-229+D	1.000E+00	1.221E-17	1.696E-16	1.917E-15	4.967E-14	1.177E-12	3.819E-11	5.542E-11	7.873E-10	7.982E-09	1.341E-08
Am-241	ΣDSR(j)		8.003E-01	7.969E-01	7.902E-01	7.671E-01	7.047E-01	5.238E-01	4.934E-01	2.247E-01	2.907E+01	1.217E+01
Co-60	Co-60	1.000E+00	9.432E+00	8.269E+00	6.356E+00	2.531E+00	1.822E-01	1.825E-05	2.893E-06	6.831E-17	2.662E-44	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	2.711E+00	2.649E+00	2.530E+00	2.152E+00	1.355E+00	2.687E-01	1.944E-01	2.639E-03	3.912E-08	2.476E-10
Eu-152	Eu-152	7.208E-01	2.879E+00	2.733E+00	2.463E+00	1.711E+00	6.038E-01	1.578E-02	7.614E-03	4.742E-07	6.311E-18	7.052E-23
Eu-152	Eu-152	2.792E-01	1.115E+00	1.059E+00	9.539E-01	6.626E-01	2.339E-01	6.113E-03	2.949E-03	1.837E-07	2.445E-18	2.731E-23
Eu-152	Gd-152	2.792E-01	9.462E-17	2.774E-16	6.156E-16	1.557E-15	2.939E-15	3.659E-15	3.666E-15	3.631E-15	3.520E-15	3.471E-15
Eu-152	ΣDSR(j)		1.115E+00	1.059E+00	9.539E-01	6.626E-01	2.339E-01	6.113E-03	2.949E-03	1.837E-07	3.523E-15	3.471E-15
Eu-154	Eu-154	1.000E+00	4.317E+00	3.990E+00	3.408E+00	1.963E+00	4.056E-01	1.628E-03	5.399E-04	2.314E-10	7.886E-27	2.507E-34
Pu-238	Pu-238	1.840E-09	1.261E-09	1.251E-09	1.231E-09	1.165E-09	9.939E-10	5.706E-10	5.107E-10	1.169E-10	2.582E-12	4.551E-13
Pu-238	Pu-238	1.000E+00	6.852E-01	6.797E-01	6.691E-01	6.329E-01	5.401E-01	3.101E-01	2.775E-01	6.354E-02	1.403E-03	2.473E-04
Pu-238	U-234	1.000E+00	2.126E-07	6.486E-07	1.511E-06	4.411E-06	1.175E-05	2.878E-05	3.097E-05	4.074E-05	2.782E-05	2.211E-05
Pu-238	Th-230	1.000E+00	6.538E-13	4.323E-12	2.213E-11	1.911E-10	1.512E-09	1.346E-08	1.683E-08	7.369E-08	2.084E-07	2.517E-07
Pu-238	Ra-226+D	1.000E+00	6.867E-15	1.077E-13	1.281E-12	3.382E-11	7.902E-10	2.389E-08	3.419E-08	4.114E-07	3.066E-06	4.637E-06
Pu-238	Pb-210+D	1.000E+00	5.579E-17	1.477E-15	3.296E-14	2.264E-12	1.335E-10	9.518E-09	1.467E-08	2.623E-07	2.323E-06	3.593E-06
Pu-238	ΣDSR(j)		6.852E-01	6.797E-01	6.691E-01	6.329E-01	5.402E-01	3.102E-01	2.776E-01	6.358E-02	1.437E-03	2.779E-04
Pu-239	Pu-239	1.000E+00	7.606E-01	7.606E-01	7.605E-01	7.602E-01	7.594E-01	7.564E-01	7.558E-01	7.481E-01	7.284E-01	7.196E-01
Pu-239	U-235+D	1.000E+00	2.899E-10	8.738E-10	2.040E-09	6.103E-09	1.754E-08	5.560E-08	6.285E-08	1.492E-07	3.030E-07	3.488E-07
Pu-239	Pa-231	1.000E+00	7.089E-14	5.284E-13	2.869E-12	2.592E-11	2.165E-10	2.237E-09	2.875E-09	1.732E-08	8.358E-08	1.180E-07
Pu-239	Ac-227+D	1.000E+00	3.272E-16	4.216E-15	4.412E-14	1.038E-12	2.106E-11	4.613E-10	6.286E-10	5.063E-09	2.751E-08	3.948E-08
Pu-239	ΣDSR(j)		7.606E-01	7.606E-01	7.605E-01	7.602E-01	7.594E-01	7.564E-01	7.558E-01	7.481E-01	7.284E-01	7.196E-01
Pu-241	Pu-241	1.000E+00	1.435E-02	1.367E-02	1.242E-02	8.863E-03	3.383E-03	1.162E-04	5.919E-05	7.617E-09	6.622E-19	1.739E-23
Pu-241	Am-241	1.000E+00	6.325E-04	1.853E-03	4.109E-03	1.035E-02	1.899E-02	1.888E-02	1.789E-02	8.172E-03	2.274E-02	4.444E-01
Pu-241	Np-237+D	1.000E+00	1.295E-09	9.464E-09	4.963E-08	4.004E-07	2.498E-06	1.205E-05	1.375E-05	2.859E-05	3.652E-05	4.041E-05
Pu-241	U-233	1.000E+00	2.629E-17	3.073E-16	2.975E-15	6.481E-14	1.201E-12	2.190E-11	2.905E-11	1.815E-10	6.512E-10	2.149E-09
Pu-241	Th-229+D	1.000E+00	4.057E-21	1.128E-19	2.674E-18	1.909E-16	1.110E-14	7.542E-13	1.159E-12	2.194E-11	2.508E-10	4.281E-10
Pu-241	ΣDSR(j)		1.498E-02	1.552E-02	1.653E-02	1.921E-02	2.237E-02	1.901E-02	1.796E-02	8.200E-03	2.278E-02	4.444E-01
Pu-241+D	Pu-241+D	2.450E-05	7.869E-06	7.499E-06	6.811E-06	4.862E-06	1.855E-06	6.372E-08	3.247E-08	4.178E-12	3.632E-22	9.539E-27
Pu-241+D	Np-237+D	2.450E-05	6.168E-11	1.883E-10	4.250E-10	1.094E-09	2.121E-09	2.701E-09	2.704E-09	2.612E-09	2.364E-09	2.259E-09
Pu-241+D	U-233	2.450E-05	1.452E-18	8.015E-18	3.614E-17	2.687E-16	1.664E-15	8.727E-15	1.016E-14	2.697E-14	5.481E-14	6.212E-14
Pu-241+D	Th-229+D	2.450E-05	2.965E-22	4.080E-21	4.517E-20	1.089E-18	2.139E-17	4.298E-16	5.903E-16	4.567E-15	2.731E-14	4.133E-14
Pu-241+D	ΣDSR(j)		7.870E-06	7.500E-06	6.811E-06	4.863E-06	1.858E-06	6.642E-08	3.517E-08	2.616E-09	2.364E-09	2.259E-09

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Sr-90+D	Sr-90+D	1.000E+00	9.956E+00	9.704E+00	9.221E+00	7.709E+00	4.623E+00	7.719E-01	5.396E-01	4.640E-03	2.113E-08	7.812E-11

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	3.124E+01	3.137E+01	3.164E+01	3.259E+01	3.548E+01	4.773E+01	5.065E+01	1.113E+02	8.600E-01	2.054E+00
Co-60	2.651E+00	3.023E+00	3.933E+00	9.878E+00	1.372E+02	1.370E+06	8.642E+06	*1.132E+15	*1.132E+15	*1.132E+15
Cs-137	9.220E+00	9.436E+00	9.883E+00	1.162E+01	1.845E+01	9.304E+01	1.286E+02	9.475E+03	6.390E+08	1.010E+11
Eu-152	6.259E+00	6.593E+00	7.317E+00	1.053E+01	2.984E+01	1.142E+03	2.367E+03	3.800E+07	*1.765E+14	*1.765E+14
Eu-154	5.791E+00	6.266E+00	7.336E+00	1.274E+01	6.163E+01	1.536E+04	4.631E+04	1.080E+11	*2.639E+14	*2.639E+14
Pu-238	3.649E+01	3.678E+01	3.737E+01	3.950E+01	4.628E+01	8.061E+01	9.006E+01	3.932E+02	1.740E+04	8.995E+04
Pu-239	3.287E+01	3.287E+01	3.287E+01	3.289E+01	3.292E+01	3.305E+01	3.308E+01	3.342E+01	3.432E+01	3.474E+01
Pu-241	1.668E+03	1.610E+03	1.512E+03	1.301E+03	1.117E+03	1.315E+03	1.392E+03	3.049E+03	1.097E+03	5.625E+01
Sr-90	2.511E+00	2.576E+00	2.711E+00	3.243E+00	5.408E+00	3.239E+01	4.633E+01	5.388E+03	1.183E+09	3.200E+11

*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)
Am-241	8.070E-02	782 ± 2	3.020E+01	8.278E-01	8.003E-01	3.124E+01
Co-60	3.180E-03	0.000E+00	9.432E+00	2.651E+00	9.432E+00	2.651E+00
Cs-137	1.210E+00	0.000E+00	2.711E+00	9.220E+00	2.711E+00	9.220E+00
Eu-152	7.120E-02	0.000E+00	3.994E+00	6.259E+00	3.994E+00	6.259E+00
Eu-154	6.650E-03	0.000E+00	4.317E+00	5.791E+00	4.317E+00	5.791E+00
Pu-238	1.510E-03	0.000E+00	6.852E-01	3.649E+01	6.852E-01	3.649E+01
Pu-239	4.840E-02	0.000E+00	7.606E-01	3.287E+01	7.606E-01	3.287E+01
Pu-241	4.320E-01	837 ± 2	8.002E-01	3.124E+01	1.499E-02	1.668E+03
Sr-90	2.630E-02	0.000E+00	9.956E+00	2.511E+00	9.956E+00	2.511E+00

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03

Am-241	Am-241	1.000E+00	6.458E-02	6.431E-02	6.377E-02	6.190E-02	5.686E-02	4.223E-02	3.979E-02	1.806E-02	2.346E+00	9.820E-01
Am-241	Pu-241	1.000E+00	2.732E-04	8.006E-04	1.775E-03	4.470E-03	8.203E-03	8.156E-03	7.729E-03	3.530E-03	9.825E-03	1.920E-01
Am-241	ΣDOSE(j)		6.486E-02	6.511E-02	6.554E-02	6.637E-02	6.506E-02	5.039E-02	4.752E-02	2.159E-02	2.356E+00	1.174E+00
Np-237	Am-241	1.000E+00	2.060E-07	6.410E-07	1.510E-06	4.490E-06	1.251E-05	3.551E-05	3.930E-05	7.179E-05	8.853E-05	9.850E-05
Np-237	Pu-241	1.000E+00	5.593E-10	4.088E-09	2.144E-08	1.730E-07	1.079E-06	5.203E-06	5.942E-06	1.235E-05	1.578E-05	1.746E-05
Np-237	Pu-241	2.450E-05	2.664E-11	8.133E-11	1.836E-10	4.728E-10	9.165E-10	1.167E-09	1.168E-09	1.128E-09	1.021E-09	9.760E-10
Np-237	ΣDOSE(j)		2.066E-07	6.452E-07	1.531E-06	4.663E-06	1.359E-05	4.072E-05	4.524E-05	5.414E-05	1.043E-04	1.160E-04
U-233	Am-241	1.000E+00	4.840E-15	2.708E-14	1.256E-13	1.028E-12	8.137E-12	7.715E-11	9.764E-11	4.898E-10	1.620E-09	5.870E-09
U-233	Pu-241	1.000E+00	1.136E-17	1.327E-16	1.285E-15	2.800E-14	5.190E-13	9.462E-12	1.255E-11	7.839E-11	2.813E-10	9.282E-10
U-233	Pu-241	2.450E-05	6.272E-19	3.462E-18	1.561E-17	1.161E-16	7.190E-16	3.770E-15	4.388E-15	1.165E-14	2.368E-14	2.683E-14
U-233	ΣDOSE(j)		4.852E-15	2.722E-14	1.269E-13	1.056E-12	8.657E-12	8.661E-11	1.102E-10	5.682E-10	1.901E-09	6.799E-09
Th-229	Am-241	1.000E+00	9.857E-19	1.369E-17	1.547E-16	4.009E-15	9.497E-14	3.082E-12	4.473E-12	6.253E-11	6.442E-10	1.082E-09
Th-229	Pu-241	1.000E+00	1.753E-21	4.872E-20	1.155E-18	8.247E-17	4.796E-15	3.258E-13	5.007E-13	9.480E-12	1.083E-10	1.850E-10
Th-229	Pu-241	2.450E-05	1.281E-22	1.762E-21	1.952E-20	4.704E-19	9.239E-18	1.857E-16	2.507E-16	1.973E-15	1.180E-14	1.786E-14
Th-229	ΣDOSE(j)		9.875E-19	1.374E-17	1.559E-16	4.092E-15	9.978E-14	3.408E-12	4.974E-12	7.302E-11	7.525E-10	1.267E-09
Co-60	Co-60	1.000E+00	2.999E-02	2.630E-02	2.021E-02	8.048E-03	5.794E-04	5.803E-08	9.200E-09	2.172E-19	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	3.281E+00	3.206E+00	3.061E+00	2.604E+00	1.640E+00	3.251E-01	2.352E-01	3.193E-03	4.734E-08	2.996E-10
Eu-152	Eu-152	7.208E-01	2.050E-01	1.946E-01	1.753E-01	1.218E-01	4.299E-02	1.124E-03	5.421E-04	3.376E-08	4.493E-19	5.021E-24
Eu-152	Eu-152	2.792E-01	7.940E-02	7.538E-02	6.792E-02	4.718E-02	1.665E-02	4.353E-04	2.100E-04	1.308E-08	1.740E-19	1.945E-24
Eu-152	ΣDOSE(j)		2.844E-01	2.700E-01	2.433E-01	1.690E-01	5.965E-02	1.559E-03	7.521E-04	4.684E-08	6.234E-19	6.966E-24
Gd-152	Eu-152	2.792E-01	6.737E-18	1.975E-17	4.383E-17	1.108E-16	2.092E-16	2.605E-16	2.610E-16	2.586E-16	2.506E-16	2.471E-16
Eu-154	Eu-154	1.000E+00	2.871E-02	2.653E-02	2.266E-02	1.305E-02	2.697E-03	1.083E-05	3.590E-06	1.539E-12	5.244E-29	0.000E+00
Pu-238	Pu-238	1.840E-09	1.904E-12	1.889E-12	1.859E-12	1.759E-12	1.501E-12	8.616E-13	7.711E-13	1.765E-13	3.899E-15	6.872E-16
Pu-238	Pu-238	1.000E+00	1.035E-03	1.026E-03	1.010E-03	9.557E-04	8.156E-04	4.683E-04	4.191E-04	9.594E-05	2.119E-06	3.735E-07
Pu-238	ΣDOSE(j)		1.035E-03	1.026E-03	1.010E-03	9.557E-04	8.156E-04	4.683E-04	4.191E-04	9.594E-05	2.119E-06	3.735E-07
U-234	Pu-238	1.000E+00	3.210E-10	9.794E-10	2.282E-09	6.661E-09	1.774E-08	4.345E-08	4.676E-08	6.151E-08	4.201E-08	3.339E-08
Th-230	Pu-238	1.000E+00	9.872E-16	6.528E-15	3.341E-14	2.886E-13	2.283E-12	2.033E-11	2.541E-11	1.113E-10	3.147E-10	3.800E-10
Ra-226	Pu-238	1.000E+00	1.037E-17	1.627E-16	1.934E-15	5.106E-14	1.193E-12	3.607E-11	5.163E-11	6.213E-10	4.629E-09	7.002E-09
Pb-210	Pu-238	1.000E+00	8.425E-20	2.230E-18	4.977E-17	3.418E-15	2.015E-13	1.437E-11	2.215E-11	3.960E-10	3.508E-09	5.426E-09
Pu-239	Pu-239	1.000E+00	3.682E-02	3.681E-02	3.681E-02	3.679E-02	3.675E-02	3.661E-02	3.658E-02	3.621E-02	3.525E-02	3.483E-02
U-235	Pu-239	1.000E+00	1.403E-11	4.229E-11	9.876E-11	2.954E-10	8.488E-10	2.691E-09	3.042E-09	7.219E-09	1.466E-08	1.688E-08
Pa-231	Pu-239	1.000E+00	3.431E-15	2.558E-14	1.389E-13	1.255E-12	1.048E-11	1.083E-10	1.391E-10	8.382E-10	4.045E-09	5.713E-09
Ac-227	Pu-239	1.000E+00	1.584E-17	2.040E-16	2.136E-15	5.026E-14	1.019E-12	2.233E-11	3.042E-11	2.451E-10	1.331E-09	1.911E-09

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	6.197E-03	5.906E-03	5.364E-03	3.829E-03	1.461E-03	5.018E-05	2.557E-05	3.291E-09	2.861E-19	7.512E-24
Pu-241	Pu-241	2.450E-05	3.400E-06	3.240E-06	2.942E-06	2.100E-06	8.016E-07	2.753E-08	1.403E-08	1.805E-12	1.569E-22	4.121E-27
Pu-241	ΣDOSE(j)		6.201E-03	5.909E-03	5.367E-03	3.831E-03	1.462E-03	5.021E-05	2.559E-05	3.292E-09	2.862E-19	7.516E-24
Sr-90	Sr-90	1.000E+00	2.618E-01	2.552E-01	2.425E-01	2.028E-01	1.216E-01	2.030E-02	1.419E-02	1.220E-04	5.556E-10	2.055E-12

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	8.070E-02	8.036E-02	7.968E-02	7.734E-02	7.104E-02	5.277E-02	4.972E-02	2.256E-02	2.924E-03	1.153E-03
Am-241	Pu-241	1.000E+00	0.000E+00	6.749E-04	1.923E-03	5.374E-03	1.017E-02	1.019E-02	9.656E-03	4.411E-03	5.717E-04	2.255E-04
Am-241	ΣS(j):		8.070E-02	8.103E-02	8.160E-02	8.272E-02	8.121E-02	6.296E-02	5.938E-02	2.697E-02	3.496E-03	1.379E-03
Np-237	Am-241	1.000E+00	0.000E+00	2.608E-08	7.789E-08	2.556E-07	7.339E-07	2.106E-06	2.332E-06	4.270E-06	5.267E-06	5.165E-06
Np-237	Pu-241	1.000E+00	0.000E+00	1.103E-10	9.586E-10	9.470E-09	6.270E-08	3.082E-07	3.523E-07	7.347E-07	9.391E-07	9.231E-07
Np-237	Pu-241	2.450E-05	0.000E+00	3.347E-12	9.573E-12	2.718E-11	5.419E-11	6.944E-11	6.952E-11	6.718E-11	6.080E-11	5.810E-11
Np-237	ΣS(j):		0.000E+00	2.619E-08	7.886E-08	2.651E-07	7.967E-07	2.414E-06	2.684E-06	5.005E-06	6.207E-06	6.088E-06
U-233	Am-241	1.000E+00	0.000E+00	5.705E-14	5.116E-13	5.611E-12	4.869E-11	4.772E-10	6.051E-10	3.059E-09	1.014E-08	1.249E-08
U-233	Pu-241	1.000E+00	0.000E+00	1.614E-16	4.243E-15	1.436E-13	3.054E-12	5.837E-11	7.759E-11	4.894E-10	1.762E-09	2.191E-09
U-233	Pu-241	2.450E-05	0.000E+00	7.374E-18	6.425E-17	6.396E-16	4.338E-15	2.343E-14	2.730E-14	7.286E-14	1.483E-13	1.681E-13
U-233	ΣS(j):		0.000E+00	5.722E-14	5.159E-13	5.756E-12	5.175E-11	5.356E-10	6.827E-10	3.548E-09	1.190E-08	1.468E-08
Th-229	Am-241	1.000E+00	0.000E+00	1.797E-18	4.837E-17	1.774E-15	4.658E-14	1.568E-12	2.279E-12	3.265E-11	3.321E-10	5.580E-10
Th-229	Pu-241	1.000E+00	0.000E+00	3.820E-21	3.029E-19	3.478E-17	2.321E-15	1.653E-13	2.547E-13	4.870E-12	5.585E-11	9.536E-11
Th-229	Pu-241	2.450E-05	0.000E+00	2.331E-22	6.141E-21	2.093E-19	4.552E-18	9.470E-17	1.281E-16	1.015E-15	6.085E-15	9.211E-15
Th-229	ΣS(j):		0.000E+00	1.801E-18	4.868E-17	1.809E-15	4.891E-14	1.733E-12	2.534E-12	3.752E-11	3.879E-10	6.534E-10
Co-60	Co-60	1.000E+00	3.180E-03	2.788E-03	2.143E-03	8.533E-04	6.143E-05	6.152E-09	9.754E-10	2.303E-20	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	1.210E+00	1.182E+00	1.129E+00	9.603E-01	6.048E-01	1.199E-01	8.676E-02	1.178E-03	1.746E-08	1.105E-10
Eu-152	Eu-152	7.208E-01	5.132E-02	4.872E-02	4.390E-02	3.049E-02	1.076E-02	2.813E-04	1.357E-04	8.453E-09	1.125E-19	1.257E-24
Eu-152	Eu-152	2.792E-01	1.988E-02	1.887E-02	1.700E-02	1.181E-02	4.169E-03	1.090E-04	5.257E-05	3.274E-09	4.357E-20	4.869E-25
Eu-152	ΣS(j):		7.120E-02	6.759E-02	6.090E-02	4.230E-02	1.493E-02	3.903E-04	1.883E-04	1.173E-08	1.561E-19	1.744E-24
Gd-152	Eu-152	2.792E-01	0.000E+00	1.243E-16	3.543E-16	9.942E-16	1.934E-15	2.424E-15	2.429E-15	2.406E-15	2.333E-15	2.300E-15
Eu-154	Eu-154	1.000E+00	6.650E-03	6.146E-03	5.249E-03	3.023E-03	6.248E-04	2.507E-06	8.216E-07	3.565E-13	1.215E-29	3.862E-37
Pu-238	Pu-238	1.840E-09	2.778E-12	2.756E-12	2.713E-12	2.567E-12	2.190E-12	1.258E-12	1.126E-12	2.577E-13	5.691E-15	1.003E-15
Pu-238	Pu-238	1.000E+00	1.510E-03	1.498E-03	1.475E-03	1.395E-03	1.190E-03	6.835E-04	6.117E-04	1.400E-04	3.093E-06	5.451E-07
Pu-238	ΣS(j):		1.510E-03	1.498E-03	1.475E-03	1.395E-03	1.190E-03	6.835E-04	6.117E-04	1.400E-04	3.093E-06	5.451E-07
U-234	Pu-238	1.000E+00	0.000E+00	4.262E-09	1.267E-08	4.093E-08	1.124E-07	2.784E-07	2.998E-07	3.953E-07	2.701E-07	2.147E-07
Th-230	Pu-238	1.000E+00	0.000E+00	1.921E-14	1.719E-13	1.870E-12	1.587E-11	1.449E-10	1.813E-10	7.983E-10	2.262E-09	2.732E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	2.775E-18	7.455E-17	2.713E-15	6.965E-14	2.177E-12	3.121E-12	3.784E-11	2.827E-10	4.278E-10
Pb-210	Pu-238	1.000E+00	0.000E+00	2.144E-20	1.708E-18	1.991E-16	1.377E-14	1.038E-12	1.605E-12	2.904E-11	2.583E-10	3.997E-10
Pu-239	Pu-239	1.000E+00	4.840E-02	4.840E-02	4.839E-02	4.837E-02	4.832E-02	4.813E-02	4.809E-02	4.760E-02	4.635E-02	4.579E-02
U-235	Pu-239	1.000E+00	0.000E+00	4.764E-11	1.428E-10	4.740E-10	1.406E-09	4.509E-09	5.101E-09	1.214E-08	2.468E-08	2.842E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	5.039E-16	4.529E-15	5.006E-14	4.440E-13	4.687E-12	6.030E-12	3.651E-11	1.765E-10	2.494E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	5.303E-18	1.406E-16	4.893E-15	1.117E-13	2.551E-12	3.482E-12	2.830E-11	1.542E-10	2.214E-10

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:48 Page 30
Summary : Upper Areas Resident Farmer Scenario (no aquatic food)
File : upper_areas.rad

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	4.320E-01	4.117E-01	3.739E-01	2.669E-01	1.019E-01	3.498E-03	1.782E-03	2.294E-07	1.994E-17	5.236E-22
Pu-241	Pu-241	2.450E-05	1.058E-05	1.009E-05	9.160E-06	6.539E-06	2.495E-06	8.570E-08	4.367E-08	5.620E-12	4.886E-22	1.283E-26
Pu-241	ΣS(j):		4.320E-01	4.117E-01	3.739E-01	2.669E-01	1.019E-01	3.498E-03	1.782E-03	2.294E-07	1.994E-17	5.237E-22

Sr-90	Sr-90	1.000E+00	2.630E-02	2.564E-02	2.436E-02	2.037E-02	1.221E-02	2.039E-03	1.425E-03	1.226E-05	5.581E-11	2.064E-13

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 77.79 seconds

Attachment 2. Upper Areas with Aquatic Food Only (Summary File)

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RESRAD, Version 6.3      T½ Limit = 180 days        06/28/2006  08:51  Page   1
 Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
 File    : upper_areas_aquatic.rad
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 Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
 File    : upper_areas_aquatic.rad
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Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Co-60	2.190E-04	2.190E-04	DCF2(3)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(4)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(5)
B-1	Eu-154	2.860E-04	2.860E-04	DCF2(7)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(8)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(9)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(10)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(11)

B-1	Pu-238	3.920E-01	3.920E-01	DCF2(12)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2(14)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(15)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(16)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(17)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(18)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(19)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(20)
B-1	U-233	1.350E-01	1.350E-01	DCF2(21)
B-1	U-234	1.320E-01	1.320E-01	DCF2(22)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(23)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Co-60	2.690E-05	2.690E-05	DCF3(3)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(4)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(5)
D-1	Eu-154	9.550E-06	9.550E-06	DCF3(7)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(8)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(9)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(10)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(11)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(12)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(14)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(15)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(16)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(17)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(18)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(19)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(20)
D-1	U-233	2.890E-04	2.890E-04	DCF3(21)
D-1	U-234	2.830E-04	2.830E-04	DCF3(22)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(23)
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)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)

D-34					
D-34	Co-60	, plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF(3,1)
D-34	Co-60	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF(3,2)
D-34	Co-60	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(3,3)
D-34					
D-34	Cs-137+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Cs-137+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(4,2)
D-34	Cs-137+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(4,3)
D-34					
D-34	Eu-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	Eu-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(5,2)
D-34	Eu-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(5,3)
D-34					
D-34	Eu-154	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	Eu-154	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(7,2)
D-34	Eu-154	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(7,3)
D-34					
D-34	Gd-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	Gd-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(8,2)
D-34	Gd-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(8,3)
D-34					
D-34	Np-237+D	, plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(9,1)
D-34	Np-237+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Np-237+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(9,3)
D-34					
D-34	Pa-231	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(10,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(10,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(10,3)
D-34					
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(11,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(11,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(11,3)
D-34					
D-34	Pu-238	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Pu-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Pu-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(12,3)
D-34					
D-34	Pu-239	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(14,1)
D-34	Pu-239	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Pu-239	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(14,3)
D-34					
D-34	Pu-241	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Pu-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Pu-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(15,3)
D-34					

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(16,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(18,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(18,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(18,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(19,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(19,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(19,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(3,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(4,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(5,2)
D-5				

D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC(7,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(7,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(8,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(8,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(9,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(10,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(11,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(11,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(12,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(14,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(14,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(15,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(15,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(16,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(16,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(18,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(18,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(19,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(19,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(21,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(22,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(22,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(23,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(23,2)

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

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	7.930E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	6.100E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.820E+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)	7.810E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	8.070E-02	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Co-60	3.180E-03	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Cs-137	1.210E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Eu-152	7.120E-02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Eu-154	6.650E-03	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-238	1.510E-03	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Pu-239	4.840E-02	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Pu-241	4.320E-01	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Sr-90	2.630E-02	0.000E+00	---	S1(18)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(18)
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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Watershed area for nearby stream or pond (m**2)	5.440E+06	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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.300E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	3.050E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.644E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.332E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.159E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Pu-241				

R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(18)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU(18,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS(18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.766E-03	ALEACH(18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(18)
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	2.644E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

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 Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.070E-04	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(11,1)

R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.324E-04	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.601E-04	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)

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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(23)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(23,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(23)

R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(23)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	not used	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	not used	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	5.400E+00	5.400E+00	---	DIET(5)

R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	not used	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	1.000E+00	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)	not used	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

Site-Specific Parameter Summary (continued)

	User		Used by RESRAD	Parameter

Menu	Parameter	Input	Default	(If different from user input)	Name
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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
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	suppressed
2 -- inhalation (w/o radon)	suppressed
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	active
7 -- drinking water	suppressed
8 -- soil ingestion	suppressed
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions

Area:	79300.00 square meters
Thickness:	6.10 meters
Cover Depth:	0.00 meters

Initial Soil Concentrations, pCi/g

Am-241	8.070E-02
Co-60	3.180E-03
Cs-137	1.210E+00
Eu-152	7.120E-02
Eu-154	6.650E-03
Pu-238	1.510E-03
Pu-239	4.840E-02
Pu-241	4.320E-01
Sr-90	2.630E-02

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	7.810E-02	1.000E+03
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.928E-01	1.004E-01	1.383E-02	5.605E-03
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.714E-03	4.015E-03	5.530E-04	2.242E-04

Maximum TDOSE(t): 1.972E-01 mrem/yr at t = 113.5 ± 0.2 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 = 1.135E+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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:51 Page 15
Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
File : upper_areas_aquatic.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 = 1.135E+02 years
Water Dependent Pathways

Radio-Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	1.811E-01	0.9181	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.811E-01	0.9181
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	1.857E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.857E-14	0.0000
Pu-241	0.000E+00	0.0000	1.616E-02	0.0819	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.616E-02	0.0819
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	1.972E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.972E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:51 Page 16
Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
File : upper_areas_aquatic.rad

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

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000

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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.

Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

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Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
File : upper_areas_aquatic.rad

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

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	1.915E-01	0.9929	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.915E-01	0.9929
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	1.018E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.018E-15	0.0000
Pu-241	0.000E+00	0.0000	1.368E-03	0.0071	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.368E-03	0.0071
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	1.928E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.928E-01	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
File : upper_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	8.396E-02	0.8365	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.396E-02	0.8365
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	1.003E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.003E-09	0.0000
Pu-239	0.000E+00	0.0000	1.643E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.643E-10	0.0000
Pu-241	0.000E+00	0.0000	1.641E-02	0.1635	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.641E-02	0.1635
Sr-90	0.000E+00	0.0000	4.936E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.936E-07	0.0000
Total	0.000E+00	0.0000	1.004E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.004E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:51 Page 23
Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
File : upper_areas_aquatic.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 = 7.810E+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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.810E+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.
Am-241	0.000E+00	0.0000	1.156E-02	0.8365	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.156E-02	0.8365
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	3.616E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.616E-09	0.0000
Pu-239	0.000E+00	0.0000	1.990E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.990E-09	0.0000
Pu-241	0.000E+00	0.0000	2.261E-03	0.1635	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.261E-03	0.1635
Sr-90	0.000E+00	0.0000	2.388E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.388E-12	0.0000
Total	0.000E+00	0.0000	1.383E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.383E-02	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:51 Page 24
Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
File : upper_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	4.689E-03	0.8365	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.689E-03	0.8365
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	3.404E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.404E-09	0.0000
Pu-239	0.000E+00	0.0000	2.994E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.994E-09	0.0000
Pu-241	0.000E+00	0.0000	9.166E-04	0.1635	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.166E-04	0.1635
Sr-90	0.000E+00	0.0000	9.076E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.076E-15	0.0000
Total	0.000E+00	0.0000	5.605E-03	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.605E-03	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	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.373E+00	1.040E+00	1.433E-01	5.809E-02
Am-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.108E-08	5.110E-06	8.760E-06	9.187E-06
Am-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.041E-15	2.999E-10	1.506E-09	1.946E-09
Am-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.531E-17	4.435E-13	5.927E-12	9.215E-12
Am-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.373E+00	1.040E+00	1.433E-01	5.810E-02
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Gd-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-154	Eu-154	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	U-234	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.643E-07	2.168E-06	1.821E-06
Pu-238	Th-230	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.493E-12	1.116E-10	1.605E-10
Pu-238	Ra-226+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.971E-13	1.751E-08	3.304E-08
Pu-238	Pb-210+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.092E-07	4.003E-07
Pu-238	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.643E-07	2.395E-06	2.254E-06
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	U-235+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.453E-10	3.027E-09	3.919E-09
Pu-239	Pa-231	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.003E-11	2.305E-09	3.075E-09
Pu-239	Ac-227+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.102E-14	3.359E-09	3.608E-08	5.487E-08
Pu-239	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.102E-14	3.394E-09	4.111E-08	6.186E-08
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.166E-03	3.799E-02	5.233E-03	2.121E-03
Pu-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.860E-11	1.567E-07	2.885E-07	3.026E-07
Pu-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.440E-18	9.238E-12	4.858E-11	6.346E-11
Pu-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.945E-20	8.876E-15	1.874E-13	2.936E-13
Pu-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.166E-03	3.799E-02	5.233E-03	2.122E-03
Pu-241+D	Pu-241+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	Np-237+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	U-233	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.096E-16	2.766E-15	3.637E-15
Pu-241+D	Th-229+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.199E-20	4.973E-18	9.584E-18
Pu-241+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.096E-16	2.771E-15	3.647E-15

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	7.810E+02	1.000E+03
Sr-90+D	Sr-90+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.877E-05	9.080E-11	3.451E-13

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	1.054E+01	2.403E+01	1.745E+02	4.303E+02
Co-60	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15
Cs-137	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13
Eu-152	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14
Eu-154	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14
Pu-238	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	3.763E+07	1.044E+07	1.109E+07
Pu-239	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	7.365E+09	6.081E+08	4.041E+08
Pu-241	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	7.897E+03	6.581E+02	4.777E-03	1.178E+04
Sr-90	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	1.332E+06	2.753E+11	7.244E+13

*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 = 113.5 ± 0.2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	8.070E-02	99.7 ± 0.2	2.375E+00	1.053E+01	2.244E+00	1.114E+01
Co-60	3.180E-03	0.000E+00	0.000E+00	*1.132E+15	0.000E+00	*1.132E+15
Cs-137	1.210E+00	0.000E+00	0.000E+00	*8.704E+13	0.000E+00	*8.704E+13
Eu-152	7.120E-02	0.000E+00	0.000E+00	*1.765E+14	0.000E+00	*1.765E+14
Eu-154	6.650E-03	0.000E+00	0.000E+00	*2.639E+14	0.000E+00	*2.639E+14
Pu-238	1.510E-03	648 ± 1	2.441E-06	1.024E+07	0.000E+00	*1.712E+13
Pu-239	4.840E-02	1.000E+03	6.186E-08	4.041E+08	3.837E-13	*6.214E+10
Pu-241	4.320E-01	156.4 ± 0.3	6.256E-02	3.996E+02	3.740E-02	6.685E+02
Sr-90	2.630E-02	152.8 ± 0.3	7.954E-04	3.143E+04	0.000E+00	*1.365E+14

*At specific activity limit

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	7.810E+02	1.000E+03

Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.915E-01	8.396E-02	1.156E-02	4.688E-03
Am-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.368E-03	1.641E-02	2.261E-03	9.165E-04
Am-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.928E-01	1.004E-01	1.382E-02	5.604E-03
Np-237	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.122E-09	4.124E-07	7.069E-07	7.414E-07
Np-237	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.100E-11	6.771E-08	1.246E-07	1.307E-07
Np-237	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.143E-09	4.801E-07	8.315E-07	8.721E-07
U-233	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.489E-16	2.420E-11	1.215E-10	1.571E-10
U-233	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.918E-18	3.559E-12	2.099E-11	2.742E-11
U-233	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.736E-17	1.195E-15	1.571E-15
U-233	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.508E-16	2.776E-11	1.425E-10	1.845E-10
Th-229	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.078E-18	3.579E-14	4.783E-13	7.437E-13
Th-229	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.432E-20	3.834E-15	8.095E-14	1.268E-13
Th-229	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.179E-21	2.148E-18	4.140E-18
Th-229	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.112E-18	3.962E-14	5.593E-13	8.705E-13
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Gd-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-154	Eu-154	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.003E-09	3.274E-09	2.749E-09
Th-230	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.254E-15	1.684E-13	2.424E-13
Ra-226	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.977E-14	2.644E-11	4.989E-11
Pb-210	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.159E-10	6.044E-10
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.187E-11	1.465E-10	1.897E-10
Pa-231	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.357E-12	9.704E-11	1.488E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.018E-15	1.481E-10	1.746E-09	2.656E-09

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	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Sr-90	Sr-90	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.936E-07	2.388E-12	9.076E-15

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

File : upper_areas_aquatic.rad

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	8.070E-02	8.036E-02	7.968E-02	7.734E-02	7.104E-02	5.277E-02	2.256E-02	2.924E-03	1.153E-03
Am-241	Pu-241	1.000E+00	0.000E+00	6.749E-04	1.923E-03	5.374E-03	1.017E-02	1.019E-02	4.411E-03	5.717E-04	2.255E-04
Am-241	ΣS(j):		8.070E-02	8.103E-02	8.160E-02	8.272E-02	8.121E-02	6.296E-02	2.697E-02	3.496E-03	1.379E-03
Np-237	Am-241	1.000E+00	0.000E+00	2.608E-08	7.789E-08	2.556E-07	7.339E-07	2.106E-06	4.270E-06	5.267E-06	5.165E-06
Np-237	Pu-241	1.000E+00	0.000E+00	1.103E-10	9.586E-10	9.470E-09	6.270E-08	3.082E-07	7.347E-07	9.391E-07	9.231E-07
Np-237	Pu-241	2.450E-05	0.000E+00	3.347E-12	9.573E-12	2.718E-11	5.419E-11	6.944E-11	6.718E-11	6.080E-11	5.810E-11
Np-237	ΣS(j):		0.000E+00	2.619E-08	7.886E-08	2.651E-07	7.967E-07	2.414E-06	5.005E-06	6.207E-06	6.088E-06
U-233	Am-241	1.000E+00	0.000E+00	5.705E-14	5.116E-13	5.611E-12	4.869E-11	4.772E-10	3.059E-09	1.014E-08	1.249E-08
U-233	Pu-241	1.000E+00	0.000E+00	1.614E-16	4.243E-15	1.436E-13	3.054E-12	5.837E-11	4.894E-10	1.762E-09	2.191E-09
U-233	Pu-241	2.450E-05	0.000E+00	7.374E-18	6.425E-17	6.396E-16	4.338E-15	2.343E-14	7.286E-14	1.483E-13	1.681E-13
U-233	ΣS(j):		0.000E+00	5.722E-14	5.159E-13	5.756E-12	5.175E-11	5.356E-10	3.548E-09	1.190E-08	1.468E-08
Th-229	Am-241	1.000E+00	0.000E+00	1.797E-18	4.837E-17	1.774E-15	4.658E-14	1.568E-12	3.269E-11	3.321E-10	5.580E-10
Th-229	Pu-241	1.000E+00	0.000E+00	3.820E-21	3.029E-19	3.478E-17	2.321E-15	1.653E-13	4.870E-12	5.585E-11	9.536E-11
Th-229	Pu-241	2.450E-05	0.000E+00	2.331E-22	6.141E-21	2.093E-19	4.552E-18	9.470E-17	1.015E-15	6.085E-15	9.211E-15
Th-229	ΣS(j):		0.000E+00	1.801E-18	4.868E-17	1.809E-15	4.891E-14	1.733E-12	3.752E-11	3.879E-10	6.534E-10
Co-60	Co-60	1.000E+00	3.180E-03	2.788E-03	2.143E-03	8.533E-04	6.143E-05	6.152E-09	2.303E-20	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	1.210E+00	1.182E+00	1.129E+00	9.603E-01	6.048E-01	1.199E-01	1.178E-03	1.746E-08	1.105E-10
Eu-152	Eu-152	7.208E-01	5.132E-02	4.872E-02	4.390E-02	3.049E-02	1.076E-02	2.813E-04	8.453E-09	1.125E-19	1.257E-24
Eu-152	Eu-152	2.792E-01	1.988E-02	1.887E-02	1.700E-02	1.181E-02	4.169E-03	1.090E-04	3.274E-09	4.357E-20	4.869E-25
Eu-152	ΣS(j):		7.120E-02	6.759E-02	6.090E-02	4.230E-02	1.493E-02	3.903E-04	1.173E-08	1.561E-19	1.744E-24
Gd-152	Eu-152	2.792E-01	0.000E+00	1.243E-16	3.543E-16	9.942E-16	1.934E-15	2.424E-15	2.406E-15	2.333E-15	2.300E-15
Eu-154	Eu-154	1.000E+00	6.650E-03	6.146E-03	5.249E-03	3.023E-03	6.248E-04	2.507E-06	3.565E-13	1.215E-29	3.862E-37
Pu-238	Pu-238	1.840E-09	2.778E-12	2.756E-12	2.713E-12	2.567E-12	2.190E-12	1.258E-12	2.577E-13	5.691E-15	1.003E-15
Pu-238	Pu-238	1.000E+00	1.510E-03	1.498E-03	1.475E-03	1.395E-03	1.190E-03	6.835E-04	1.400E-04	3.093E-06	5.451E-07
Pu-238	ΣS(j):		1.510E-03	1.498E-03	1.475E-03	1.395E-03	1.190E-03	6.835E-04	1.400E-04	3.093E-06	5.451E-07
U-234	Pu-238	1.000E+00	0.000E+00	4.262E-09	1.267E-08	4.093E-08	1.124E-07	2.784E-07	3.953E-07	2.701E-07	2.147E-07
Th-230	Pu-238	1.000E+00	0.000E+00	1.921E-14	1.719E-13	1.870E-12	1.587E-11	1.449E-10	7.983E-10	2.262E-09	2.732E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	2.775E-18	7.455E-17	2.713E-15	6.965E-14	2.177E-12	3.784E-11	2.827E-10	4.278E-10
Pb-210	Pu-238	1.000E+00	0.000E+00	2.144E-20	1.708E-18	1.991E-16	1.377E-14	1.038E-12	2.904E-11	2.583E-10	3.997E-10
Pu-239	Pu-239	1.000E+00	4.840E-02	4.840E-02	4.839E-02	4.837E-02	4.832E-02	4.813E-02	4.760E-02	4.635E-02	4.579E-02
U-235	Pu-239	1.000E+00	0.000E+00	4.764E-11	1.428E-10	4.740E-10	1.406E-09	4.509E-09	1.214E-08	2.468E-08	2.842E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	5.039E-16	4.529E-15	5.006E-14	4.440E-13	4.687E-12	3.651E-11	1.765E-10	2.494E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	5.303E-18	1.406E-16	4.893E-15	1.117E-13	2.551E-12	2.830E-11	1.542E-10	2.214E-10

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:51 Page 30
Summary : Upper Areas Resident Farmer Scenario (aquatic food only)
File : upper_areas_aquatic.rad

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	4.320E-01	4.117E-01	3.739E-01	2.669E-01	1.019E-01	3.498E-03	2.294E-07	1.994E-17	5.236E-22
Pu-241	Pu-241	2.450E-05	1.058E-05	1.009E-05	9.160E-06	6.539E-06	2.495E-06	8.570E-08	5.620E-12	4.886E-22	1.283E-26

Pu-241	ΣS(j):		4.320E-01	4.117E-01	3.739E-01	2.669E-01	1.019E-01	3.498E-03	2.294E-07	1.994E-17	5.237E-22
Sr-90	Sr-90	1.000E+00	2.630E-02	2.564E-02	2.436E-02	2.037E-02	1.221E-02	2.039E-03	1.226E-05	5.581E-11	2.064E-13

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 798.10 seconds
Total water/soil iteration failures = 2.807E+03.

Attachment 3. Filter Bed Areas with No Aquatic Food (Summary File)

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:27 Page 1
Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.rad

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Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Co-60	2.190E-04	2.190E-04	DCF2(3)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(4)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(5)
B-1	Eu-154	2.860E-04	2.860E-04	DCF2(7)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(8)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(9)

B-1	Pa-231	1.280E+00	1.280E+00	DCF2(10)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(11)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2(12)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2(14)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(15)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(16)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(17)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(18)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(19)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(20)
B-1	U-233	1.350E-01	1.350E-01	DCF2(21)
B-1	U-234	1.320E-01	1.320E-01	DCF2(22)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(23)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Co-60	2.690E-05	2.690E-05	DCF3(3)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(4)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(5)
D-1	Eu-154	9.550E-06	9.550E-06	DCF3(7)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(8)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(9)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(10)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(11)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(12)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(14)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(15)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(16)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(17)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(18)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(19)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(20)
D-1	U-233	2.890E-04	2.890E-04	DCF3(21)
D-1	U-234	2.830E-04	2.830E-04	DCF3(22)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(23)
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)

Dose Conversion Factor (and Related) Parameter Summary (continued)
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Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)

D-34	Am-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34					
D-34	Co-60	, plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF(3,1)
D-34	Co-60	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF(3,2)
D-34	Co-60	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(3,3)
D-34					
D-34	Cs-137+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Cs-137+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(4,2)
D-34	Cs-137+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(4,3)
D-34					
D-34	Eu-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	Eu-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(5,2)
D-34	Eu-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(5,3)
D-34					
D-34	Eu-154	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	Eu-154	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(7,2)
D-34	Eu-154	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(7,3)
D-34					
D-34	Gd-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	Gd-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(8,2)
D-34	Gd-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(8,3)
D-34					
D-34	Np-237+D	, plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(9,1)
D-34	Np-237+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Np-237+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(9,3)
D-34					
D-34	Pa-231	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(10,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(10,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(10,3)
D-34					
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(11,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(11,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(11,3)
D-34					
D-34	Pu-238	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Pu-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Pu-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(12,3)
D-34					
D-34	Pu-239	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(14,1)
D-34	Pu-239	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Pu-239	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(14,3)
D-34					
D-34	Pu-241	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Pu-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Pu-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(15,3)
D-34					

Dose Conversion Factor (and Related) Parameter Summary (continued)
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Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(16,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(18,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(18,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(18,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(19,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(19,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(19,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(3,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(4,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(5,1)

D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(5,2)
D-5				
D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC(7,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(7,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(8,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(8,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(9,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(10,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(11,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(11,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(12,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(14,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(14,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(15,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(15,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(16,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(16,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(18,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(18,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(19,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(19,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(21,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)

D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(22,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(22,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(23,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(23,2)

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

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.140E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	6.100E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.270E+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)	1.140E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	7.810E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.700E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Co-60	6.690E-03	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Cs-137	2.550E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Eu-152	1.500E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Eu-154	1.400E-02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-238	3.190E-03	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.020E-01	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Pu-241	9.110E-01	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Sr-90	5.540E-02	0.000E+00	---	S1(18)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(18)
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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Watershed area for nearby stream or pond (m**2)	5.440E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.600E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	2.440E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.644E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.332E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.159E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)

R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(18)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU(18,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS(18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.788E-03	ALEACH(18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(18)
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	2.644E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

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 Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.070E-04	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.363E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for daughter Pb-210				

R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.324E-04	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.601E-04	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)

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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(23)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(23,1)

R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(23)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALF
R017	Mass loading for inhalation (g/m**3)	1.000E-04	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	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-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)
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)

R018	Meat and poultry consumption (kg/yr)	6.300E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	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)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

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

Contaminated Zone Dimensions

Area: 51400.00 square meters
Thickness: 6.10 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Am-241	1.700E-01
Co-60	6.690E-03
Cs-137	2.550E+00
Eu-152	1.500E-01
Eu-154	1.400E-02
Pu-238	3.190E-03
Pu-239	1.020E-01
Pu-241	9.110E-01
Sr-90	5.540E-02

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
TDOSE(t):	8.354E+00	8.141E+00	7.734E+00	6.493E+00	4.034E+00	9.097E-01	7.010E-01	1.289E-01	5.037E+00	2.547E-00
M(t):	3.341E-01	3.256E-01	3.094E-01	2.597E-01	1.614E-01	3.639E-02	2.804E-02	5.154E-03	2.015E-01	1.019E-01

Maximum TDOSE(t): 8.354E+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-	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.

Am-241	4.392E-03	0.0005	5.691E-03	0.0007	0.000E+00	0.0000	1.076E-01	0.0129	1.106E-03	0.0001	6.310E-05	0.0000	1.690E-02	0.0020
Co-60	5.874E-02	0.0070	1.037E-07	0.0000	0.000E+00	0.0000	2.347E-03	0.0003	1.262E-03	0.0002	1.520E-04	0.0000	4.616E-06	0.0000
Cs-137	4.959E+00	0.5937	6.075E-06	0.0000	0.000E+00	0.0000	8.773E-01	0.1050	7.671E-01	0.0918	2.505E-01	0.0300	3.450E-03	0.0004
Eu-152	5.927E-01	0.0709	2.441E-06	0.0000	0.000E+00	0.0000	4.122E-04	0.0000	8.000E-05	0.0000	2.779E-06	0.0000	2.593E-05	0.0000
Eu-154	5.977E-02	0.0072	2.909E-07	0.0000	0.000E+00	0.0000	5.596E-05	0.0000	1.086E-05	0.0000	3.772E-07	0.0000	3.519E-06	0.0000
Pu-238	2.871E-07	0.0000	9.410E-05	0.0000	0.000E+00	0.0000	1.772E-03	0.0002	3.641E-05	0.0000	5.195E-07	0.0000	2.783E-04	0.0000
Pu-239	1.761E-05	0.0000	3.306E-03	0.0004	0.000E+00	0.0000	6.292E-02	0.0075	1.293E-03	0.0002	1.845E-05	0.0000	9.884E-03	0.0012
Pu-241	2.844E-05	0.0000	5.785E-04	0.0001	0.000E+00	0.0000	1.106E-02	0.0013	2.230E-04	0.0000	3.374E-06	0.0000	1.737E-03	0.0002
Sr-90	7.782E-04	0.0001	5.407E-06	0.0000	0.000E+00	0.0000	4.363E-01	0.0522	8.806E-02	0.0105	2.615E-02	0.0031	2.288E-04	0.0000
Total	5.676E+00	0.6794	9.684E-03	0.0012	0.000E+00	0.0000	1.500E+00	0.1795	8.592E-01	0.1029	2.769E-01	0.0331	3.252E-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 = 0.000E+00 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.358E-01	0.0163
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.251E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.858E+00	0.8209
Eu-152	0.000E+00	0.0000	0.000E+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-01	0.0710
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.984E-02	0.0072
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.181E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.743E-02	0.0093
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.363E-02	0.0016
Sr-90	0.000E+00	0.0000	0.000E+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	0.0660
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.354E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:27 Page 16
Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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-	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.
Am-241	4.373E-03	0.0005	5.667E-03	0.0007	0.000E+00	0.0000	1.072E-01	0.0132	1.101E-03	0.0001	6.283E-05	0.0000	1.683E-02	0.0021
Co-60	5.150E-02	0.0063	9.094E-08	0.0000	0.000E+00	0.0000	2.058E-03	0.0003	1.107E-03	0.0001	1.333E-04	0.0000	4.047E-06	0.0000
Cs-137	4.846E+00	0.5953	5.937E-06	0.0000	0.000E+00	0.0000	8.572E-01	0.1053	7.496E-01	0.0921	2.448E-01	0.0301	3.371E-03	0.0004
Eu-152	5.626E-01	0.0691	2.317E-06	0.0000	0.000E+00	0.0000	3.913E-04	0.0000	7.594E-05	0.0000	2.638E-06	0.0000	2.461E-05	0.0000
Eu-154	5.524E-02	0.0068	2.688E-07	0.0000	0.000E+00	0.0000	5.172E-05	0.0000	1.004E-05	0.0000	3.486E-07	0.0000	3.253E-06	0.0000
Pu-238	2.848E-07	0.0000	9.336E-05	0.0000	0.000E+00	0.0000	1.758E-03	0.0002	3.612E-05	0.0000	5.155E-07	0.0000	2.761E-04	0.0000
Pu-239	1.761E-05	0.0000	3.306E-03	0.0004	0.000E+00	0.0000	6.291E-02	0.0077	1.293E-03	0.0002	1.845E-05	0.0000	9.884E-03	0.0012
Pu-241	6.387E-05	0.0000	5.989E-04	0.0001	0.000E+00	0.0000	1.144E-02	0.0014	2.218E-04	0.0000	3.744E-06	0.0000	1.797E-03	0.0002
Sr-90	7.586E-04	0.0001	5.271E-06	0.0000	0.000E+00	0.0000	4.253E-01	0.0522	8.584E-02	0.0105	2.549E-02	0.0031	2.230E-04	0.0000

Total	5.521E+00	0.6781	9.679E-03	0.0012	0.000E+00	0.0000	1.468E+00	0.1804	8.393E-01	0.1031	2.705E-01	0.0332	3.242E-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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.352E-01	0.0166
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.481E-02	0.0067
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.701E+00	0.8231
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.631E-01	0.0692
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.531E-02	0.0068
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.164E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.743E-02	0.0095
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.412E-02	0.0017
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.376E-01	0.0660
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.141E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:27 Page 17
Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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-	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.
Am-241	4.337E-03	0.0006	5.619E-03	0.0007	0.000E+00	0.0000	1.062E-01	0.0137	1.092E-03	0.0001	6.230E-05	0.0000	1.669E-02	0.0022
Co-60	3.959E-02	0.0051	6.990E-08	0.0000	0.000E+00	0.0000	1.582E-03	0.0002	8.506E-04	0.0001	1.025E-04	0.0000	3.111E-06	0.0000
Cs-137	4.627E+00	0.5982	5.668E-06	0.0000	0.000E+00	0.0000	8.185E-01	0.1058	7.157E-01	0.0925	2.337E-01	0.0302	3.219E-03	0.0004
Eu-152	5.070E-01	0.0655	2.088E-06	0.0000	0.000E+00	0.0000	3.526E-04	0.0000	6.843E-05	0.0000	2.377E-06	0.0000	2.218E-05	0.0000
Eu-154	4.718E-02	0.0061	2.296E-07	0.0000	0.000E+00	0.0000	4.417E-05	0.0000	8.573E-06	0.0000	2.978E-07	0.0000	2.778E-06	0.0000
Pu-238	2.804E-07	0.0000	9.189E-05	0.0000	0.000E+00	0.0000	1.730E-03	0.0002	3.555E-05	0.0000	5.076E-07	0.0000	2.718E-04	0.0000
Pu-239	1.761E-05	0.0000	3.305E-03	0.0004	0.000E+00	0.0000	6.291E-02	0.0081	1.293E-03	0.0002	1.844E-05	0.0000	9.883E-03	0.0013
Pu-241	1.294E-04	0.0000	6.364E-04	0.0001	0.000E+00	0.0000	1.213E-02	0.0016	2.194E-04	0.0000	4.428E-06	0.0000	1.906E-03	0.0002
Sr-90	7.207E-04	0.0001	5.008E-06	0.0000	0.000E+00	0.0000	4.041E-01	0.0522	8.156E-02	0.0105	2.422E-02	0.0031	2.119E-04	0.0000
Total	5.226E+00	0.6757	9.665E-03	0.0012	0.000E+00	0.0000	1.408E+00	0.1820	8.009E-01	0.1035	2.581E-01	0.0334	3.221E-02	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+00 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.

Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.340E-01	0.0173
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.213E-02	0.0054
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.398E+00	0.8272
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.074E-01	0.0656
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.724E-02	0.0061
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.130E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.742E-02	0.0100
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.503E-02	0.0019
Sr-90	0.000E+00	0.0000	0.000E+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-01	0.0660
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.734E-00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:27 Page 18
Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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-	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.
Am-241	4.210E-03	0.0006	5.454E-03	0.0008	0.000E+00	0.0000	1.031E-01	0.0159	1.060E-03	0.0002	6.047E-05	0.0000	1.620E-02	0.0025
Co-60	1.576E-02	0.0024	2.783E-08	0.0000	0.000E+00	0.0000	6.298E-04	0.0001	3.387E-04	0.0001	4.080E-05	0.0000	1.239E-06	0.0000
Cs-137	3.936E+00	0.6062	4.822E-06	0.0000	0.000E+00	0.0000	6.962E-01	0.1072	6.088E-01	0.0938	1.988E-01	0.0306	2.738E-03	0.0004
Eu-152	3.521E-01	0.0542	1.450E-06	0.0000	0.000E+00	0.0000	2.449E-04	0.0000	4.753E-05	0.0000	1.651E-06	0.0000	1.540E-05	0.0000
Eu-154	2.717E-02	0.0042	1.322E-07	0.0000	0.000E+00	0.0000	2.544E-05	0.0000	4.937E-06	0.0000	1.715E-07	0.0000	1.600E-06	0.0000
Pu-238	2.652E-07	0.0000	8.693E-05	0.0000	0.000E+00	0.0000	1.637E-03	0.0003	3.363E-05	0.0000	4.808E-07	0.0000	2.571E-04	0.0000
Pu-239	1.760E-05	0.0000	3.304E-03	0.0005	0.000E+00	0.0000	6.288E-02	0.0097	1.292E-03	0.0002	1.844E-05	0.0000	9.879E-03	0.0015
Pu-241	3.104E-04	0.0000	7.367E-04	0.0001	0.000E+00	0.0000	1.400E-02	0.0022	2.115E-04	0.0000	6.291E-06	0.0000	2.200E-03	0.0003
Sr-90	6.026E-04	0.0001	4.187E-06	0.0000	0.000E+00	0.0000	3.379E-01	0.0520	6.820E-02	0.0105	2.025E-02	0.0031	1.772E-04	0.0000
Total	4.336E+00	0.6678	9.592E-03	0.0015	0.000E+00	0.0000	1.217E+00	0.1874	6.800E-01	0.1047	2.192E-01	0.0338	3.147E-02	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+01 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.301E-01	0.0200
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.677E-02	0.0026
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.442E+00	0.8382
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.524E-01	0.0543
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.721E-02	0.0042
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.015E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.739E-02	0.0119
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.747E-02	0.0027

Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.271E-01	0.0658
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.493E+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-	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.
Am-241	3.868E-03	0.0010	5.010E-03	0.0012	0.000E+00	0.0000	9.475E-02	0.0235	9.743E-04	0.0002	5.555E-05	0.0000	1.488E-02	0.0037
Co-60	1.135E-03	0.0003	2.004E-09	0.0000	0.000E+00	0.0000	4.535E-05	0.0000	2.438E-05	0.0000	2.937E-06	0.0000	8.918E-08	0.0000
Cs-137	2.479E+00	0.6145	3.037E-06	0.0000	0.000E+00	0.0000	4.385E-01	0.1087	3.834E-01	0.0951	1.252E-01	0.0310	1.725E-03	0.0004
Eu-152	1.243E-01	0.0308	5.119E-07	0.0000	0.000E+00	0.0000	8.646E-05	0.0000	1.678E-05	0.0000	5.828E-07	0.0000	5.438E-06	0.0000
Eu-154	5.616E-03	0.0014	2.733E-08	0.0000	0.000E+00	0.0000	5.258E-06	0.0000	1.020E-06	0.0000	3.544E-08	0.0000	3.307E-07	0.0000
Pu-238	2.264E-07	0.0000	7.419E-05	0.0000	0.000E+00	0.0000	1.397E-03	0.0003	2.870E-05	0.0000	4.119E-07	0.0000	2.194E-04	0.0001
Pu-239	1.758E-05	0.0000	3.300E-03	0.0008	0.000E+00	0.0000	6.281E-02	0.0156	1.291E-03	0.0003	1.842E-05	0.0000	9.868E-03	0.0024
Pu-241	5.608E-04	0.0001	8.542E-04	0.0002	0.000E+00	0.0000	1.618E-02	0.0040	1.921E-04	0.0000	8.755E-06	0.0000	2.542E-03	0.0006
Sr-90	3.614E-04	0.0001	2.511E-06	0.0000	0.000E+00	0.0000	2.026E-01	0.0502	4.089E-02	0.0101	1.214E-02	0.0030	1.062E-04	0.0000
Total	2.615E+00	0.6482	9.245E-03	0.0023	0.000E+00	0.0000	8.164E-01	0.2024	4.269E-01	0.1058	1.374E-01	0.0341	2.935E-02	0.0073

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.195E-01	0.0296
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.208E-03	0.0003
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.428E-00	0.8497
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.244E-01	0.0308
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.623E-03	0.0014
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.720E-03	0.0004
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.731E-02	0.0192
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.034E-02	0.0050
Sr-90	0.000E+00	0.0000	0.000E+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-01	0.0635
Total	0.000E+00	0.0000	0.000E+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+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.
Am-241	2.875E-03	0.0032	3.721E-03	0.0041	0.000E+00	0.0000	7.043E-02	0.0774	7.254E-04	0.0008	4.127E-05	0.0000	1.105E-02	0.0122
Co-60	1.137E-07	0.0000	2.007E-13	0.0000	0.000E+00	0.0000	4.541E-09	0.0000	2.442E-09	0.0000	8.942E-10	0.0000	8.931E-12	0.0000
Cs-137	4.915E-01	0.5402	6.021E-07	0.0000	0.000E+00	0.0000	8.693E-02	0.0956	7.602E-02	0.0836	2.482E-02	0.0273	3.419E-04	0.0004
Eu-152	3.249E-03	0.0036	1.338E-08	0.0000	0.000E+00	0.0000	2.260E-06	0.0000	4.385E-07	0.0000	1.523E-08	0.0000	1.421E-07	0.0000
Eu-154	2.254E-05	0.0000	1.097E-10	0.0000	0.000E+00	0.0000	2.110E-08	0.0000	4.095E-09	0.0000	1.422E-10	0.0000	1.327E-09	0.0000
Pu-238	1.301E-07	0.0000	4.260E-05	0.0000	0.000E+00	0.0000	8.020E-04	0.0009	1.648E-05	0.0000	2.410E-07	0.0000	1.260E-04	0.0001
Pu-239	1.752E-05	0.0000	3.288E-03	0.0036	0.000E+00	0.0000	6.257E-02	0.0688	1.286E-03	0.0014	1.834E-05	0.0000	9.830E-03	0.0108
Pu-241	5.557E-04	0.0006	7.239E-04	0.0008	0.000E+00	0.0000	1.370E-02	0.0151	1.419E-04	0.0002	9.004E-06	0.0000	2.151E-03	0.0024
Sr-90	6.033E-05	0.0001	4.192E-07	0.0000	0.000E+00	0.0000	3.383E-02	0.0372	6.828E-03	0.0075	2.027E-03	0.0022	1.774E-05	0.0000
Total	4.982E-01	0.5477	7.777E-03	0.0085	0.000E+00	0.0000	2.683E-01	0.2949	8.502E-02	0.0935	2.692E-02	0.0296	2.352E-02	0.0259

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.885E-02	0.0977
Co-60	0.000E+00	0.0000	0.000E+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-07	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.796E-01	0.7470
Eu-152	0.000E+00	0.0000	0.000E+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-03	0.0036
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.256E-05	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.874E-04	0.0011
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.701E-02	0.0846
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.728E-02	0.0190
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.276E-02	0.0470
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.097E-01	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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 = 1.140E+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.
Am-241	2.709E-03	0.0039	3.507E-03	0.0050	0.000E+00	0.0000	6.638E-02	0.0947	6.839E-04	0.0011	3.889E-05	0.0001	1.042E-02	0.0149
Co-60	1.802E-08	0.0000	3.181E-14	0.0000	0.000E+00	0.0000	7.200E-10	0.0000	3.871E-10	0.0000	4.664E-11	0.0000	1.416E-12	0.0000
Cs-137	3.556E-01	0.5072	4.356E-07	0.0000	0.000E+00	0.0000	6.290E-02	0.0897	5.500E-02	0.0785	1.796E-02	0.0256	2.474E-04	0.0004

Eu-152	1.567E-03	0.0022	6.454E-09	0.0000	0.000E+00	0.0000	1.090E-06	0.0000	2.116E-07	0.0000	7.349E-09	0.0000	6.857E-08	0.0000
Eu-154	7.475E-06	0.0000	3.638E-11	0.0000	0.000E+00	0.0000	6.998E-09	0.0000	1.358E-09	0.0000	4.717E-11	0.0000	4.401E-10	0.0000
Pu-238	1.165E-07	0.0000	3.813E-05	0.0001	0.000E+00	0.0000	7.178E-04	0.0010	1.475E-05	0.0000	2.168E-07	0.0000	1.128E-04	0.0002
Pu-239	1.750E-05	0.0000	3.285E-03	0.0047	0.000E+00	0.0000	6.252E-02	0.0892	1.285E-03	0.0018	1.833E-05	0.0000	9.822E-03	0.0140
Pu-241	5.266E-04	0.0008	6.840E-04	0.0010	0.000E+00	0.0000	1.295E-02	0.0185	1.338E-04	0.0002	7.574E-06	0.0000	2.032E-03	0.0029
Sr-90	4.218E-05	0.0001	2.931E-07	0.0000	0.000E+00	0.0000	2.365E-02	0.0337	4.773E-03	0.0068	1.417E-03	0.0020	1.240E-05	0.0000
Total	3.604E-01	0.5142	7.515E-03	0.0107	0.000E+00	0.0000	2.291E-01	0.3268	6.189E-02	0.0883	1.944E-02	0.0277	2.264E-02	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 = 1.140E+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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.373E-02	0.1194
Co-60	0.000E+00	0.0000	0.000E+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-08	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.917E-01	0.7014
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.569E-03	0.0022
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.484E-06	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.837E-04	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.695E-02	0.1098
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.633E-02	0.0233
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.989E-02	0.0426
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.010E-01	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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-	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.
Am-241	1.234E-03	0.0096	1.591E-03	0.0124	0.000E+00	0.0000	3.023E-02	0.2346	3.139E-04	0.0024	1.767E-05	0.0001	4.727E-03	0.0367
Co-60	4.254E-19	0.0000	7.512E-25	0.0000	0.000E+00	0.0000	1.700E-20	0.0000	9.141E-21	0.0000	1.101E-21	0.0000	3.343E-23	0.0000
Cs-137	4.826E-03	0.0375	5.912E-09	0.0000	0.000E+00	0.0000	8.537E-04	0.0066	7.466E-04	0.0058	2.438E-04	0.0019	3.358E-06	0.0000
Eu-152	9.762E-08	0.0000	4.021E-13	0.0000	0.000E+00	0.0000	6.790E-11	0.0000	1.318E-11	0.0000	4.577E-13	0.0000	4.270E-12	0.0000
Eu-154	3.204E-12	0.0000	1.559E-17	0.0000	0.000E+00	0.0000	3.000E-15	0.0000	5.821E-16	0.0000	2.022E-17	0.0000	1.887E-16	0.0000
Pu-238	2.734E-08	0.0000	8.735E-06	0.0001	0.000E+00	0.0000	1.644E-04	0.0013	3.380E-06	0.0000	5.653E-08	0.0000	2.582E-05	0.0002
Pu-239	1.733E-05	0.0001	3.251E-03	0.0252	0.000E+00	0.0000	6.188E-02	0.4802	1.272E-03	0.0099	1.814E-05	0.0001	9.721E-03	0.0754
Pu-241	2.413E-04	0.0019	3.114E-04	0.0024	0.000E+00	0.0000	5.912E-03	0.0459	6.131E-05	0.0005	3.458E-06	0.0000	9.251E-04	0.0072
Sr-90	3.627E-07	0.0000	2.520E-09	0.0000	0.000E+00	0.0000	2.033E-04	0.0016	4.104E-05	0.0003	1.219E-05	0.0001	1.066E-07	0.0000
Total	6.319E-03	0.0490	5.163E-03	0.0401	0.000E+00	0.0000	9.924E-02	0.7701	2.438E-03	0.0189	2.953E-04	0.0023	1.540E-02	0.1195

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.811E-02	0.2958
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.527E-19	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.674E-03	0.0518
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.770E-08	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.208E-12	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.024E-04	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.616E-02	0.5910
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.455E-03	0.0579
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.570E-04	0.0020
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.289E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:27 Page 23
Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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 = 7.810E+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.
Am-241	1.663E-04	0.0000	2.067E-04	0.0000	0.000E+00	0.0000	4.071E-03	0.0008	4.585E-05	0.0000	3.323E-06	0.0000	6.139E-04	0.0001
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	7.156E-08	0.0000	8.767E-14	0.0000	0.000E+00	0.0000	1.266E-08	0.0000	1.107E-08	0.0000	3.614E-09	0.0000	4.979E-11	0.0000
Eu-152	1.299E-18	0.0000	9.023E-17	0.0000	0.000E+00	0.0000	3.444E-16	0.0000	6.683E-17	0.0000	9.286E-19	0.0000	2.166E-17	0.0000
Eu-154	1.092E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.022E-31	0.0000	1.984E-32	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	4.593E-09	0.0000	1.986E-07	0.0000	0.000E+00	0.0000	3.712E-06	0.0000	7.730E-08	0.0000	7.060E-09	0.0000	5.747E-07	0.0000
Pu-239	1.689E-05	0.0000	3.166E-03	0.0006	0.000E+00	0.0000	6.025E-02	0.0120	1.238E-03	0.0002	1.767E-05	0.0000	9.465E-03	0.0019
Pu-241	3.241E-05	0.0000	4.044E-05	0.0000	0.000E+00	0.0000	7.937E-04	0.0002	8.873E-06	0.0000	4.540E-07	0.0000	1.201E-04	0.0000
Sr-90	1.651E-12	0.0000	1.147E-14	0.0000	0.000E+00	0.0000	9.259E-10	0.0000	1.869E-10	0.0000	5.549E-11	0.0000	4.855E-13	0.0000
Total	2.156E-04	0.0000	3.413E-03	0.0007	0.000E+00	0.0000	6.512E-02	0.0129	1.293E-03	0.0003	2.045E-05	0.0000	1.020E-02	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 = 7.810E+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.
Am-241	4.292E+00	0.8522	0.000E+00	0.0000	0.000E+00	0.0000	6.402E-01	0.1271	3.894E-03	0.0008	3.811E-04	0.0001	4.942E+00	0.9812
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.895E-08	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.253E-16	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.093E-28	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.574E-06	0.0000
Pu-239	2.768E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.094E-24	0.0000	1.015E-26	0.0000	2.474E-26	0.0000	7.415E-02	0.0147
Pu-241	1.724E-02	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	2.499E-03	0.0005	1.337E-05	0.0000	1.455E-06	0.0000	2.075E-02	0.0041
Sr-90	0.000E+00	0.0000	0.000E+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-09	0.0000
Total	4.309E+00	0.8556	0.000E+00	0.0000	0.000E+00	0.0000	6.427E-01	0.1276	3.907E-03	0.0009	3.826E-04	0.0001	5.037E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:27 Page 24
Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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-	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.
Am-241	6.974E-05	0.0000	8.178E-05	0.0000	0.000E+00	0.0000	1.706E-03	0.0007	2.147E-05	0.0000	9.377E-07	0.0000	2.429E-04	0.0001
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	4.530E-10	0.0000	5.549E-16	0.0000	0.000E+00	0.0000	8.012E-11	0.0000	7.007E-11	0.0000	2.288E-11	0.0000	3.151E-13	0.0000
Eu-152	1.452E-23	0.0000	8.896E-17	0.0000	0.000E+00	0.0000	3.395E-16	0.0000	6.589E-17	0.0000	9.155E-19	0.0000	2.136E-17	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	6.064E-09	0.0000	3.864E-08	0.0000	0.000E+00	0.0000	7.150E-07	0.0000	1.561E-08	0.0000	5.181E-09	0.0000	1.043E-07	0.0000
Pu-239	1.669E-05	0.0000	3.128E-03	0.0012	0.000E+00	0.0000	5.952E-02	0.0234	1.223E-03	0.0005	1.745E-05	0.0000	9.351E-03	0.0037
Pu-241	1.353E-05	0.0000	1.600E-05	0.0000	0.000E+00	0.0000	3.311E-04	0.0001	4.107E-06	0.0000	1.829E-07	0.0000	4.752E-05	0.0000
Sr-90	6.107E-15	0.0000	4.243E-17	0.0000	0.000E+00	0.0000	3.424E-12	0.0000	6.910E-13	0.0000	2.052E-13	0.0000	1.795E-15	0.0000
Total	9.996E-05	0.0000	3.225E-03	0.0013	0.000E+00	0.0000	6.156E-02	0.0242	1.249E-03	0.0005	1.858E-05	0.0000	9.642E-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

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.
Am-241	1.789E+00	0.7026	0.000E+00	0.0000	0.000E+00	0.0000	2.752E-01	0.1081	1.917E-03	0.0008	1.677E-04	0.0001	2.069E+00	0.8123
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.263E-10	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.167E-16	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.848E-07	0.0000
Pu-239	1.130E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-18	0.0000	4.800E-21	0.0000	1.056E-20	0.0000	7.326E-12	0.0288
Pu-241	3.502E-01	0.1375	0.000E+00	0.0000	0.000E+00	0.0000	5.386E-02	0.0211	3.751E-04	0.0001	4.292E-05	0.0000	4.049E-01	0.1590
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.328E-12	0.0000
Total	2.140E+00	0.8401	0.000E+00	0.0000	0.000E+00	0.0000	3.291E-01	0.1292	2.292E-03	0.0009	2.006E-04	0.0001	2.547E+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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	7.986E-01	7.952E-01	7.885E-01	7.654E-01	7.030E-01	5.222E-01	4.921E-01	2.233E-01	2.907E+01	1.217E+01
Am-241	Np-237+D	1.000E+00	2.551E-06	7.939E-06	1.870E-05	5.561E-05	1.549E-04	4.398E-04	4.867E-04	8.891E-04	1.097E-03	1.220E-03
Am-241	U-233	1.000E+00	5.987E-14	3.348E-13	1.553E-12	1.271E-11	1.005E-10	9.532E-10	1.204E-09	6.052E-09	2.001E-08	7.267E-08
Am-241	Th-229+D	1.000E+00	1.212E-17	1.682E-16	1.901E-15	4.924E-14	1.167E-12	3.786E-11	5.494E-11	7.804E-10	7.913E-09	1.329E-08
Am-241	ΣDSR(j)		7.986E-01	7.952E-01	7.885E-01	7.654E-01	7.032E-01	5.226E-01	4.925E-01	2.242E-01	2.907E+01	1.217E+01
Co-60	Co-60	1.000E+00	9.344E+00	8.192E+00	6.297E+00	2.507E+00	1.805E-01	1.808E-05	2.846E-06	6.767E-17	2.662E-44	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	2.689E+00	2.628E+00	2.509E+00	2.134E+00	1.344E+00	2.665E-01	1.928E-01	2.617E-03	3.881E-08	2.456E-10
Eu-152	Eu-152	7.208E-01	2.851E+00	2.706E+00	2.438E+00	1.694E+00	5.979E-01	1.563E-02	7.538E-03	4.695E-07	6.248E-18	6.982E-23
Eu-152	Eu-152	2.792E-01	1.104E+00	1.048E+00	9.445E-01	6.560E-01	2.316E-01	6.052E-03	2.920E-03	1.819E-07	2.420E-18	2.704E-23
Eu-152	Gd-152	2.792E-01	9.390E-17	2.753E-16	6.109E-16	1.545E-15	2.916E-15	3.631E-15	3.638E-15	3.604E-15	3.494E-15	3.444E-15
Eu-152	ΣDSR(j)		1.104E+00	1.048E+00	9.445E-01	6.560E-01	2.316E-01	6.052E-03	2.920E-03	1.819E-07	3.496E-15	3.444E-15
Eu-154	Eu-154	1.000E+00	4.275E+00	3.951E+00	3.374E+00	1.943E+00	4.016E-01	1.612E-03	5.346E-04	2.291E-10	7.808E-27	2.482E-34
Pu-238	Pu-238	1.840E-09	1.258E-09	1.248E-09	1.229E-09	1.162E-09	9.919E-10	5.695E-10	5.097E-10	1.167E-10	2.577E-12	4.542E-13
Pu-238	Pu-238	1.000E+00	6.838E-01	6.784E-01	6.677E-01	6.317E-01	5.391E-01	3.095E-01	2.770E-01	6.341E-02	1.401E-03	2.468E-04
Pu-238	U-234	1.000E+00	2.119E-07	6.467E-07	1.507E-06	4.399E-06	1.171E-05	2.869E-05	3.088E-05	4.062E-05	2.774E-05	2.205E-05
Pu-238	Th-230	1.000E+00	6.491E-13	4.290E-12	2.196E-11	1.896E-10	1.500E-09	1.336E-08	1.670E-08	7.310E-08	2.067E-07	2.497E-07
Pu-238	Ra-226+D	1.000E+00	6.837E-15	1.073E-13	1.275E-12	3.368E-11	7.870E-10	2.379E-08	3.405E-08	4.098E-07	3.053E-06	4.619E-06
Pu-238	Pb-210+D	1.000E+00	5.579E-17	1.477E-15	3.296E-14	2.264E-12	1.335E-10	9.518E-09	1.467E-08	2.622E-07	2.323E-06	3.593E-06
Pu-238	ΣDSR(j)		6.838E-01	6.784E-01	6.677E-01	6.317E-01	5.391E-01	3.095E-01	2.770E-01	6.345E-02	1.434E-03	2.774E-04
Pu-239	Pu-239	1.000E+00	7.592E-01	7.591E-01	7.590E-01	7.587E-01	7.579E-01	7.550E-01	7.544E-01	7.466E-01	7.270E-01	7.182E-01
Pu-239	U-235+D	1.000E+00	2.876E-10	8.668E-10	2.024E-09	6.054E-09	1.740E-08	5.515E-08	6.235E-08	1.479E-07	3.005E-07	3.460E-07
Pu-239	Pa-231	1.000E+00	7.087E-14	5.283E-13	2.869E-12	2.592E-11	2.164E-10	2.237E-09	2.874E-09	1.731E-08	8.356E-08	1.180E-07
Pu-239	Ac-227+D	1.000E+00	3.263E-16	4.202E-15	4.396E-14	1.034E-12	2.098E-11	4.594E-10	6.260E-10	5.043E-09	2.740E-08	3.932E-08
Pu-239	ΣDSR(j)		7.592E-01	7.591E-01	7.590E-01	7.587E-01	7.579E-01	7.550E-01	7.544E-01	7.466E-01	7.270E-01	7.182E-01
Pu-241	Pu-241	1.000E+00	1.432E-02	1.365E-02	1.239E-02	8.846E-03	3.376E-03	1.159E-04	5.908E-05	7.603E-09	6.609E-19	1.736E-23
Pu-241	Am-241	1.000E+00	6.311E-04	1.849E-03	4.101E-03	1.032E-02	1.895E-02	1.884E-02	1.785E-02	8.154E-03	2.274E-02	4.444E-01
Pu-241	Np-237+D	1.000E+00	1.294E-09	9.459E-09	4.960E-08	4.002E-07	2.497E-06	1.204E-05	1.375E-05	2.858E-05	3.650E-05	4.039E-05
Pu-241	U-233	1.000E+00	2.624E-17	3.066E-16	2.968E-15	6.463E-14	1.198E-12	2.184E-11	2.896E-11	1.809E-10	6.493E-10	2.146E-09
Pu-241	Th-229+D	1.000E+00	4.027E-21	1.119E-19	2.651E-18	1.893E-16	1.100E-14	7.476E-13	1.149E-12	2.175E-11	2.486E-10	4.244E-10
Pu-241	ΣDSR(j)		1.495E-02	1.549E-02	1.649E-02	1.917E-02	2.233E-02	1.897E-02	1.792E-02	8.183E-03	2.278E-02	4.444E-01
Pu-241+D	Pu-241+D	2.450E-05	7.796E-06	7.429E-06	6.747E-06	4.816E-06	1.838E-06	6.313E-08	3.217E-08	4.139E-12	3.599E-22	9.450E-27
Pu-241+D	Np-237+D	2.450E-05	6.164E-11	1.882E-10	4.248E-10	1.094E-09	2.120E-09	2.699E-09	2.702E-09	2.611E-09	2.363E-09	2.258E-09
Pu-241+D	U-233	2.450E-05	1.449E-18	7.997E-18	3.605E-17	2.679E-16	1.660E-15	8.702E-15	1.013E-14	2.689E-14	5.465E-14	6.194E-14
Pu-241+D	Th-229+D	2.450E-05	2.942E-22	4.046E-21	4.479E-20	1.079E-18	2.120E-17	4.260E-16	5.753E-16	4.527E-15	2.707E-14	4.097E-14
Pu-241+D	ΣDSR(j)		7.796E-06	7.430E-06	6.748E-06	4.817E-06	1.840E-06	6.583E-08	3.497E-08	2.615E-09	2.363E-09	2.258E-09

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Sr-90+D	Sr-90+D	1.000E+00	9.955E+00	9.704E+00	9.220E+00	7.709E+00	4.623E+00	7.719E-01	5.396E-01	4.640E-03	2.113E-08	7.812E-11

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

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

Nuclide (i) t=	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	3.131E+01	3.144E+01	3.171E+01	3.266E+01	3.555E+01	4.783E+01	5.076E+01	1.115E+02	8.600E-01	2.054E+00
Co-60	2.676E+00	3.052E+00	3.970E+00	9.971E+00	1.385E+02	1.383E+06	8.723E+06	*1.132E+15	*1.132E+15	*1.132E+15
Cs-137	9.296E+00	9.514E+00	9.964E+00	1.171E+01	1.860E+01	9.381E+01	1.297E+02	9.552E+03	6.442E+08	1.018E+11
Eu-152	6.322E+00	6.659E+00	7.390E+00	1.064E+01	3.014E+01	1.153E+03	2.390E+03	3.828E+07	*1.765E+14	*1.765E+14
Eu-154	5.848E+00	6.328E+00	7.409E+00	1.286E+01	6.225E+01	1.551E+04	4.677E+04	1.091E+11	*2.639E+14	*2.639E+14
Pu-238	3.656E+01	3.685E+01	3.744E+01	3.958E+01	4.637E+01	8.076E+01	9.024E+01	3.940E-02	1.743E+04	9.014E+04
Pu-239	3.293E+01	3.293E+01	3.294E+01	3.295E+01	3.299E+01	3.311E+01	3.314E+01	3.348E+01	3.439E+01	3.481E+01
Pu-241	1.671E+03	1.613E+03	1.515E+03	1.304E+03	1.120E+03	1.318E+03	1.395E+03	3.055E+03	1.098E+03	5.626E+01
Sr-90	2.511E+00	2.576E+00	2.711E+00	3.243E+00	5.408E+00	3.239E+01	4.633E+01	5.388E-03	1.183E+09	3.200E+11

*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)
Am-241	1.700E-01	782 ± 2	3.020E+01	8.278E-01	7.986E-01	3.131E+01
Co-60	6.690E-03	0.000E+00	9.344E+00	2.676E+00	9.344E+00	2.676E+00
Cs-137	2.550E+00	0.000E+00	2.689E+00	9.296E+00	2.689E+00	9.296E+00
Eu-152	1.500E-01	0.000E+00	3.955E+00	6.322E+00	3.955E+00	6.322E+00
Eu-154	1.400E-02	0.000E+00	4.275E+00	5.848E+00	4.275E+00	5.848E+00
Pu-238	3.190E-03	0.000E+00	6.838E-01	3.656E+01	6.838E-01	3.656E+01
Pu-239	1.020E-01	0.000E+00	7.592E-01	3.293E+01	7.592E-01	3.293E+01
Pu-241	9.110E-01	837 ± 2	8.002E-01	3.124E+01	1.496E-02	1.671E+03
Sr-90	5.540E-02	0.000E+00	9.955E+00	2.511E+00	9.955E+00	2.511E+00

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Summary : Filter Bed Areas Resident Farmer Scenario (no aquatic food)
File : filter_bed_areas.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	1.140E+02	3.000E+02	7.810E+02	1.000E+03

Am-241	Am-241	1.000E+00	1.358E-01	1.352E-01	1.340E-01	1.301E-01	1.195E-01	8.877E-02	8.365E-02	3.796E-02	4.941E+00	2.069E+00
Am-241	Pu-241	1.000E+00	5.749E-04	1.685E-03	3.736E-03	9.405E-03	1.726E-02	1.716E-02	1.626E-02	7.429E-03	2.072E-02	4.048E-01
Am-241	ΣDOSE(j)		1.363E-01	1.369E-01	1.378E-01	1.395E-01	1.368E-01	1.059E-01	9.991E-02	4.539E-02	4.962E+00	2.473E+00
Np-237	Am-241	1.000E+00	4.337E-07	1.350E-06	3.179E-06	9.453E-06	2.634E-05	7.477E-05	8.274E-05	1.511E-04	1.864E-04	2.074E-04
Np-237	Pu-241	1.000E+00	1.179E-09	8.617E-09	4.519E-08	3.646E-07	2.274E-06	1.097E-05	1.252E-05	2.603E-05	3.325E-05	3.680E-05
Np-237	Pu-241	2.450E-05	5.616E-11	1.714E-10	3.870E-10	9.965E-10	1.932E-09	2.459E-09	2.462E-09	2.378E-09	2.153E-09	2.057E-09
Np-237	ΣDOSE(j)		4.350E-07	1.358E-06	3.224E-06	9.818E-06	2.861E-05	8.574E-05	9.527E-05	1.772E-04	2.197E-04	2.442E-04
U-233	Am-241	1.000E+00	1.018E-14	5.691E-14	2.640E-13	2.160E-12	1.709E-11	1.620E-10	2.051E-10	1.029E-09	3.402E-09	1.235E-08
U-233	Pu-241	1.000E+00	2.391E-17	2.793E-16	2.704E-15	5.888E-14	1.091E-12	1.990E-11	2.638E-11	1.648E-10	5.915E-10	1.955E-09
U-233	Pu-241	2.450E-05	1.320E-18	7.285E-18	3.284E-17	2.441E-16	1.512E-15	7.927E-15	9.227E-15	2.450E-14	4.979E-14	5.642E-14
U-233	ΣDOSE(j)		1.020E-14	5.720E-14	2.667E-13	2.219E-12	1.819E-11	1.819E-10	2.315E-10	1.194E-09	3.994E-09	1.431E-08
Th-229	Am-241	1.000E+00	2.060E-18	2.859E-17	3.231E-16	8.371E-15	1.983E-13	6.436E-12	9.340E-12	1.327E-10	1.345E-09	2.260E-09
Th-229	Pu-241	1.000E+00	3.669E-21	1.019E-19	2.415E-18	1.724E-16	1.002E-14	6.811E-13	1.047E-12	1.982E-11	2.265E-10	3.866E-10
Th-229	Pu-241	2.450E-05	2.680E-22	3.686E-21	4.080E-20	9.834E-19	1.931E-17	3.881E-16	5.241E-16	4.124E-15	2.467E-14	3.733E-14
Th-229	ΣDOSE(j)		2.064E-18	2.870E-17	3.256E-16	8.545E-15	2.084E-13	7.118E-12	1.039E-11	1.525E-10	1.572E-09	2.647E-09
Co-60	Co-60	1.000E+00	6.251E-02	5.481E-02	4.213E-02	1.677E-02	1.208E-03	1.209E-07	1.917E-08	4.527E-19	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	6.858E+00	6.701E+00	6.398E+00	5.442E+00	3.428E+00	6.796E-01	4.917E-01	6.674E-03	9.895E-08	6.263E-10
Eu-152	Eu-152	7.208E-01	4.276E-01	4.059E-01	3.658E-01	2.540E-01	8.968E-02	2.344E-03	1.131E-03	7.043E-08	9.372E-19	1.047E-23
Eu-152	Eu-152	2.792E-01	1.656E-01	1.572E-01	1.417E-01	9.840E-02	3.474E-02	9.079E-04	4.380E-04	2.728E-08	3.630E-19	4.056E-24
Eu-152	ΣDOSE(j)		5.932E-01	5.631E-01	5.074E-01	3.524E-01	1.244E-01	3.252E-03	1.569E-03	9.770E-08	1.300E-18	1.453E-23
Gd-152	Eu-152	2.792E-01	1.408E-17	4.130E-17	9.164E-17	2.317E-16	4.375E-16	5.447E-16	5.457E-16	5.406E-16	5.240E-16	5.167E-16
Eu-154	Eu-154	1.000E+00	5.984E-02	5.531E-02	4.724E-02	2.721E-02	5.623E-03	2.256E-05	7.484E-06	3.208E-12	1.093E-28	0.000E+00
Pu-238	Pu-238	1.840E-09	4.014E-12	3.982E-12	3.919E-12	3.708E-12	3.164E-12	1.817E-12	1.626E-12	3.722E-13	8.221E-15	1.449E-15
Pu-238	Pu-238	1.000E+00	2.181E-03	2.164E-03	2.130E-03	2.015E-03	1.720E-03	9.874E-04	8.836E-04	2.023E-04	4.468E-06	7.874E-07
Pu-238	ΣDOSE(j)		2.181E-03	2.164E-03	2.130E-03	2.015E-03	1.720E-03	9.874E-04	8.836E-04	2.023E-04	4.468E-06	7.874E-07
U-234	Pu-238	1.000E+00	6.761E-10	2.063E-09	4.807E-09	1.403E-08	3.736E-08	9.153E-08	9.849E-08	1.296E-07	8.850E-08	7.033E-08
Th-230	Pu-238	1.000E+00	2.071E-15	1.369E-14	7.004E-14	6.048E-13	4.785E-12	4.261E-11	5.326E-11	2.332E-10	6.595E-10	7.965E-10
Ra-226	Pu-238	1.000E+00	2.181E-17	3.422E-16	4.068E-15	1.074E-13	2.511E-12	7.590E-11	1.086E-10	1.307E-09	9.740E-09	1.473E-08
Pb-210	Pu-238	1.000E+00	1.780E-19	4.712E-18	1.052E-16	7.222E-15	4.258E-13	3.036E-11	4.678E-11	8.366E-10	7.411E-09	1.146E-08
Pu-239	Pu-239	1.000E+00	7.743E-02	7.743E-02	7.742E-02	7.739E-02	7.731E-02	7.701E-02	7.695E-02	7.616E-02	7.415E-02	7.326E-02
U-235	Pu-239	1.000E+00	2.933E-11	8.841E-11	2.064E-10	6.175E-10	1.774E-09	5.625E-09	6.359E-09	1.509E-08	3.065E-08	3.529E-08
Pa-231	Pu-239	1.000E+00	7.228E-15	5.389E-14	2.926E-13	2.644E-12	2.207E-11	2.281E-10	2.931E-10	1.766E-09	8.523E-09	1.204E-08
Ac-227	Pu-239	1.000E+00	3.328E-17	4.286E-16	4.484E-15	1.055E-13	2.140E-12	4.686E-11	6.385E-11	5.143E-10	2.794E-09	4.010E-09

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	1.304E-02	1.243E-02	1.129E-02	8.058E-03	3.076E-03	1.056E-04	5.382E-05	6.926E-09	6.021E-19	1.581E-23
Pu-241	Pu-241	2.450E-05	7.102E-06	6.768E-06	6.147E-06	4.388E-06	1.675E-06	5.751E-08	2.930E-08	3.771E-12	3.278E-22	8.609E-27
Pu-241	ΣDOSE(j)		1.305E-02	1.244E-02	1.130E-02	8.063E-03	3.077E-03	1.057E-04	5.385E-05	6.930E-09	6.024E-19	1.582E-23
Sr-90	Sr-90	1.000E+00	5.515E-01	5.376E-01	5.108E-01	4.271E-01	2.561E-01	4.276E-02	2.989E-02	3.570E-04	1.170E-09	4.328E-12

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.700E-01	1.693E-01	1.678E-01	1.629E-01	1.497E-01	1.112E-01	1.047E-01	4.753E-02	6.160E-03	2.430E-03
Am-241	Pu-241	1.000E+00	0.000E+00	1.423E-03	4.055E-03	1.133E-02	2.144E-02	2.149E-02	2.036E-02	9.302E-03	1.206E-03	4.755E-04
Am-241	ΣS(j):		1.700E-01	1.707E-01	1.719E-01	1.743E-01	1.711E-01	1.326E-01	1.251E-01	5.683E-02	7.366E-03	2.905E-03
Np-237	Am-241	1.000E+00	0.000E+00	5.494E-08	1.641E-07	5.385E-07	1.546E-06	4.437E-06	4.913E-06	8.995E-06	1.110E-05	1.088E-05
Np-237	Pu-241	1.000E+00	0.000E+00	2.325E-10	2.021E-09	1.997E-08	1.322E-07	6.500E-07	7.429E-07	1.549E-06	1.980E-06	1.947E-06
Np-237	Pu-241	2.450E-05	0.000E+00	7.057E-12	2.019E-11	5.731E-11	1.143E-10	1.464E-10	1.466E-10	1.417E-10	1.282E-10	1.225E-10
Np-237	ΣS(j):		0.000E+00	5.518E-08	1.661E-07	5.586E-07	1.678E-06	5.087E-06	5.656E-06	1.054E-05	1.308E-05	1.283E-05
U-233	Am-241	1.000E+00	0.000E+00	1.202E-13	1.078E-12	1.182E-11	1.026E-10	1.005E-09	1.275E-09	6.444E-09	2.137E-08	2.631E-08
U-233	Pu-241	1.000E+00	0.000E+00	3.403E-16	8.948E-15	3.028E-13	6.439E-12	1.231E-10	1.636E-10	1.032E-09	3.715E-09	4.620E-09
U-233	Pu-241	2.450E-05	0.000E+00	1.555E-17	1.355E-16	1.349E-15	9.147E-15	4.941E-14	5.758E-14	1.536E-13	3.128E-13	3.546E-13
U-233	ΣS(j):		0.000E+00	1.205E-13	1.087E-12	1.212E-11	1.090E-10	1.128E-09	1.438E-09	7.476E-09	2.508E-08	3.093E-08
Th-229	Am-241	1.000E+00	0.000E+00	3.785E-18	1.019E-16	3.737E-15	9.813E-14	3.303E-12	4.802E-12	6.878E-11	6.996E-10	1.175E-09
Th-229	Pu-241	1.000E+00	0.000E+00	8.056E-21	6.388E-19	7.333E-17	4.895E-15	3.486E-13	5.370E-13	1.027E-11	1.178E-10	2.011E-10
Th-229	Pu-241	2.450E-05	0.000E+00	4.915E-22	1.295E-20	4.415E-19	9.600E-18	1.997E-16	2.701E-16	2.140E-15	1.283E-14	1.942E-14
Th-229	ΣS(j):		0.000E+00	3.793E-18	1.026E-16	3.811E-15	1.030E-13	3.651E-12	5.339E-12	7.905E-11	8.173E-10	1.377E-09
Co-60	Co-60	1.000E+00	6.690E-03	5.865E-03	4.508E-03	1.795E-03	1.292E-04	1.294E-08	2.052E-09	4.845E-20	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	2.550E+00	2.492E+00	2.379E+00	2.024E+00	1.275E+00	2.527E-01	1.828E-01	2.482E-03	3.680E-08	2.329E-10
Eu-152	Eu-152	7.208E-01	1.081E-01	1.026E-01	9.249E-02	6.424E-02	2.268E-02	5.927E-04	2.859E-04	1.781E-08	2.370E-19	2.648E-24
Eu-152	Eu-152	2.792E-01	4.188E-02	3.976E-02	3.582E-02	2.488E-02	8.784E-03	2.296E-04	1.108E-04	6.898E-09	9.180E-20	1.026E-24
Eu-152	ΣS(j):		1.500E-01	1.424E-01	1.283E-01	8.912E-02	3.146E-02	8.222E-04	3.967E-04	2.471E-08	3.288E-19	3.674E-24
Gd-152	Eu-152	2.792E-01	0.000E+00	2.619E-16	7.465E-16	2.095E-15	4.075E-15	5.107E-15	5.117E-15	5.070E-15	4.915E-15	4.845E-15
Eu-154	Eu-154	1.000E+00	1.400E-02	1.294E-02	1.105E-02	6.365E-03	1.315E-03	5.279E-06	1.751E-06	7.504E-13	2.557E-29	8.130E-37
Pu-238	Pu-238	1.840E-09	5.870E-12	5.823E-12	5.732E-12	5.422E-12	4.627E-12	2.657E-12	2.378E-12	5.443E-13	1.202E-14	2.119E-15
Pu-238	Pu-238	1.000E+00	3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	1.292E-03	2.958E-04	6.534E-06	1.152E-06
Pu-238	ΣS(j):		3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	1.292E-03	2.958E-04	6.534E-06	1.152E-06
U-234	Pu-238	1.000E+00	0.000E+00	9.003E-09	2.677E-08	8.648E-08	2.375E-07	5.882E-07	6.334E-07	8.352E-07	5.707E-07	4.535E-07
Th-230	Pu-238	1.000E+00	0.000E+00	4.058E-14	3.631E-13	3.951E-12	3.353E-11	3.060E-10	3.830E-10	1.687E-09	4.778E-09	5.772E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	5.863E-18	1.575E-16	5.731E-15	1.472E-13	4.599E-12	6.593E-12	7.994E-11	5.973E-10	9.038E-10
Pb-210	Pu-238	1.000E+00	0.000E+00	4.530E-20	3.608E-18	4.206E-16	2.909E-14	2.194E-12	3.390E-12	6.136E-11	5.457E-10	8.445E-10
Pu-239	Pu-239	1.000E+00	1.020E-01	1.020E-01	1.020E-01	1.019E-01	1.018E-01	1.014E-01	1.014E-01	1.003E-01	9.768E-02	9.650E-02
U-235	Pu-239	1.000E+00	0.000E+00	1.004E-10	3.009E-10	9.990E-10	2.964E-09	9.503E-09	1.075E-08	2.558E-08	5.201E-08	5.988E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	1.062E-15	9.544E-15	1.055E-13	9.357E-13	9.878E-12	1.271E-11	7.694E-11	3.720E-10	5.255E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	1.117E-17	2.963E-16	1.031E-14	2.355E-13	5.376E-12	7.340E-12	5.964E-11	3.249E-10	4.665E-10

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	9.110E-01	8.681E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	3.759E-03	4.937E-07	4.205E-17	1.104E-21
Pu-241	Pu-241	2.450E-05	2.232E-05	2.127E-05	1.932E-05	1.379E-05	5.262E-06	1.807E-07	9.209E-08	1.185E-11	1.030E-21	2.705E-26
Pu-241	ΣS(j):		9.110E-01	8.682E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	3.759E-03	4.937E-07	4.205E-17	1.104E-21

Sr-90	Sr-90	1.000E+00	5.540E-02	5.400E-02	5.131E-02	4.290E-02	2.572E-02	4.295E-03	3.003E-03	2.582E-05	1.176E-10	4.347E-13

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 75.29 seconds

Attachment 4. Filter Bed Areas with Aquatic Food Only (Summary File)

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:29 Page 1
Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.rad

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Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Co-60	2.190E-04	2.190E-04	DCF2(3)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(4)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(5)
B-1	Eu-154	2.860E-04	2.860E-04	DCF2(7)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(8)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(9)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(10)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(11)

B-1	Pu-238	3.920E-01	3.920E-01	DCF2(12)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2(14)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(15)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(16)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(17)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(18)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(19)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(20)
B-1	U-233	1.350E-01	1.350E-01	DCF2(21)
B-1	U-234	1.320E-01	1.320E-01	DCF2(22)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(23)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Co-60	2.690E-05	2.690E-05	DCF3(3)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(4)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(5)
D-1	Eu-154	9.550E-06	9.550E-06	DCF3(7)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(8)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(9)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(10)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(11)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(12)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(14)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(15)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(16)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(17)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(18)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(19)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(20)
D-1	U-233	2.890E-04	2.890E-04	DCF3(21)
D-1	U-234	2.830E-04	2.830E-04	DCF3(22)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(23)
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)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)

D-34					
D-34	Co-60	, plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF(3,1)
D-34	Co-60	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF(3,2)
D-34	Co-60	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(3,3)
D-34					
D-34	Cs-137+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Cs-137+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(4,2)
D-34	Cs-137+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(4,3)
D-34					
D-34	Eu-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	Eu-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(5,2)
D-34	Eu-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(5,3)
D-34					
D-34	Eu-154	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	Eu-154	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(7,2)
D-34	Eu-154	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(7,3)
D-34					
D-34	Gd-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	Gd-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(8,2)
D-34	Gd-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(8,3)
D-34					
D-34	Np-237+D	, plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(9,1)
D-34	Np-237+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Np-237+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(9,3)
D-34					
D-34	Pa-231	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(10,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(10,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(10,3)
D-34					
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(11,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(11,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(11,3)
D-34					
D-34	Pu-238	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Pu-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Pu-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(12,3)
D-34					
D-34	Pu-239	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(14,1)
D-34	Pu-239	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Pu-239	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(14,3)
D-34					
D-34	Pu-241	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Pu-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Pu-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(15,3)
D-34					

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(16,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(18,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(18,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(18,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(19,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(19,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(19,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(3,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(4,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(5,2)
D-5				

D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC(7,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(7,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(8,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(8,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(9,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(10,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(11,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(11,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(12,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(14,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(14,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(15,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(15,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(16,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(16,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(18,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(18,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(19,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(19,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(21,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(22,1)

D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(22,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(23,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(23,2)

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

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	5.140E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	6.100E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	2.270E+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)	7.810E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.700E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Co-60	6.690E-03	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Cs-137	2.550E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Eu-152	1.500E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Eu-154	1.400E-02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-238	3.190E-03	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.020E-01	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Pu-241	9.110E-01	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Sr-90	5.540E-02	0.000E+00	---	S1(18)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(18)
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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Watershed area for nearby stream or pond (m**2)	5.440E+06	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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.300E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	3.050E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.644E-07	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.332E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.159E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Pu-241				

R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(18)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU(18,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS(18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.768E-03	ALEACH(18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(18)
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	2.644E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

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 Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.070E-04	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.163E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(11,1)

R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.324E-04	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.601E-04	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)

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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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(23)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(23,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(23)

R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(23)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	not used	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	not used	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	5.400E+00	5.400E+00	---	DIET(5)

R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	not used	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	1.000E+00	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)	not used	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

Site-Specific Parameter Summary (continued)

	User		Used by RESRAD	Parameter

Menu	Parameter	Input	Default	(If different from user input)	Name
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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
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	suppressed
2 -- inhalation (w/o radon)	suppressed
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	active
7 -- drinking water	suppressed
8 -- soil ingestion	suppressed
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions

Area:	51400.00 square meters
Thickness:	6.10 meters
Cover Depth:	0.00 meters

Initial Soil Concentrations, pCi/g

Am-241	1.700E-01
Co-60	6.690E-03
Cs-137	2.550E+00
Eu-152	1.500E-01
Eu-154	1.400E-02
Pu-238	3.190E-03
Pu-239	1.020E-01
Pu-241	9.110E-01
Sr-90	5.540E-02

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	7.810E+02	1.000E+03
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.633E-01	1.371E-01	1.888E-02	7.655E-03
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.053E-02	5.483E-03	7.552E-04	3.062E-04

Maximum TDOSE(t): 2.693E-01 mrem/yr at t = 113.6 ± 0.2 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 = 1.136E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

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Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.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 = 1.136E+02 years
Water Dependent Pathways

Radio-Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	2.472E-01	0.9179	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.472E-01	0.9179
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	2.545E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.545E-14	0.0000
Pu-241	0.000E+00	0.0000	2.210E-02	0.0821	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.210E-02	0.0821
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	2.693E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.693E-01	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.rad

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

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000

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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

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Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.

Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:29 Page 19
Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:29 Page 20
Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:29 Page 21
Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	2.614E-01	0.9929	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.614E-01	0.9929
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	1.390E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.390E-15	0.0000
Pu-241	0.000E+00	0.0000	1.869E-03	0.0071	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.869E-03	0.0071
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	2.633E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.633E-01	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	1.146E-01	0.8364	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.146E-01	0.8364
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	1.374E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-09	0.0000
Pu-239	0.000E+00	0.0000	2.244E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.244E-10	0.0000
Pu-241	0.000E+00	0.0000	2.243E-02	0.1636	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.243E-02	0.1636
Sr-90	0.000E+00	0.0000	6.739E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.739E-07	0.0000
Total	0.000E+00	0.0000	1.371E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.371E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 08:29 Page 23
Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.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 = 7.810E+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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.810E+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.
Am-241	0.000E+00	0.0000	1.579E-02	0.8363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.579E-02	0.8363
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	4.952E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.952E-09	0.0000
Pu-239	0.000E+00	0.0000	2.718E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.718E-09	0.0000
Pu-241	0.000E+00	0.0000	3.090E-03	0.1637	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.090E-03	0.1637
Sr-90	0.000E+00	0.0000	3.260E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.260E-12	0.0000
Total	0.000E+00	0.0000	1.888E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.888E-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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	6.402E-03	0.8363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.402E-03	0.8363
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	4.661E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.661E-09	0.0000
Pu-239	0.000E+00	0.0000	4.090E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.090E-09	0.0000
Pu-241	0.000E+00	0.0000	1.253E-03	0.1637	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.253E-03	0.1637
Sr-90	0.000E+00	0.0000	1.239E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.239E-14	0.0000
Total	0.000E+00	0.0000	7.655E-03	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.655E-03	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	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.538E+00	6.744E-01	9.288E-02	3.765E-02
Am-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.311E-08	3.312E-06	5.678E-06	5.955E-06
Am-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.212E-15	1.944E-10	9.760E-10	1.261E-09
Am-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.881E-17	2.874E-13	3.842E-12	5.973E-12
Am-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.538E+00	6.744E-01	9.289E-02	3.766E-02
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Gd-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-154	Eu-154	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	U-234	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.306E-07	1.405E-06	1.180E-06
Pu-238	Th-230	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.676E-13	7.231E-11	1.041E-10
Pu-238	Ra-226+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.278E-13	1.135E-08	2.142E-08
Pu-238	Pb-210+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.356E-07	2.595E-07
Pu-238	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.306E-07	1.552E-06	1.461E-06
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	U-235+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.590E-10	1.962E-09	2.540E-09
Pu-239	Pa-231	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.835E-11	1.300E-09	1.993E-09
Pu-239	Ac-227+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.363E-14	1.982E-09	2.339E-08	3.556E-08
Pu-239	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.363E-14	2.200E-09	2.665E-08	4.010E-08
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.052E-03	2.462E-02	3.392E-03	1.375E-03
Pu-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.150E-11	1.016E-07	1.870E-07	1.961E-07
Pu-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.878E-18	5.340E-12	3.149E-11	4.113E-11
Pu-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.150E-20	5.753E-15	1.215E-13	1.903E-13
Pu-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.052E-03	2.462E-02	3.392E-03	1.375E-03
Pu-241+D	Pu-241+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	Np-237+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	U-233	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.106E-17	1.793E-15	2.358E-15
Pu-241+D	Th-229+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.771E-21	3.223E-18	6.212E-18
Pu-241+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.107E-17	1.796E-15	2.364E-15

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	7.810E+02	1.000E+03
Sr-90+D	Sr-90+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.216E-05	5.885E-11	2.237E-13

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	1.626E+01	3.707E+01	2.691E+02	6.639E+02
Co-60	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15
Cs-137	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13
Eu-152	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14
Eu-154	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14
Pu-238	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	5.806E+07	1.811E+07	1.711E+07
Pu-239	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	1.136E+10	9.381E+08	6.235E+08
Pu-241	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	1.218E+04	1.015E+03	7.370E+03	1.818E+04
Sr-90	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	2.055E+06	4.248E+11	1.118E+14

*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 = 113.6 ± 0.2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.700E-01	99.7 ± 0.2	1.539E+00	1.624E+01	1.454E+00	1.719E+01
Co-60	6.690E-03	0.000E+00	0.000E+00	*1.132E+15	0.000E+00	*1.132E+15
Cs-137	2.550E+00	0.000E+00	0.000E+00	*8.704E+13	0.000E+00	*8.704E+13
Eu-152	1.500E-01	0.000E+00	0.000E+00	*1.765E+14	0.000E+00	*1.765E+14
Eu-154	1.400E-02	0.000E+00	0.000E+00	*2.639E+14	0.000E+00	*2.639E+14
Pu-238	3.190E-03	648 ± 1	1.582E-06	1.580E+07	0.000E+00	*1.712E+13
Pu-239	1.020E-01	1.000E+03	4.010E-08	6.235E+08	2.495E-13	*6.214E+10
Pu-241	9.110E-01	156.4 ± 0.3	4.055E-02	6.165E+02	2.426E-02	1.030E+03
Sr-90	5.540E-02	152.8 ± 0.3	5.156E-04	4.849E+04	0.000E+00	*1.365E+14

*At specific activity limit

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	7.810E+02	1.000E+03

Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.614E-01	1.146E-01	1.579E-02	6.401E-03
Am-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.869E-03	2.243E-02	3.090E-03	1.253E-03
Am-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.633E-01	1.371E-01	1.888E-02	7.654E-03
Np-237	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.628E-09	5.631E-07	9.652E-07	1.012E-06
Np-237	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.870E-11	9.255E-08	1.703E-07	1.787E-07
Np-237	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.657E-09	6.556E-07	1.136E-06	1.191E-06
U-233	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.860E-16	3.304E-11	1.659E-10	2.144E-10
U-233	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.621E-18	4.865E-12	3.868E-11	3.747E-11
U-233	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.473E-17	1.633E-15	2.148E-15
U-233	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.886E-16	3.791E-11	1.946E-10	2.519E-10
Th-229	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.298E-18	4.887E-14	6.531E-13	1.015E-12
Th-229	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.692E-20	5.241E-15	1.106E-13	1.733E-13
Th-229	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.080E-21	2.936E-18	5.659E-18
Th-229	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.345E-18	5.411E-14	7.638E-13	1.189E-12
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Gd-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-154	Eu-154	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.374E-09	4.483E-09	3.764E-09
Th-230	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.087E-15	2.307E-13	3.319E-13
Ra-226	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.076E-16	3.621E-11	6.832E-11
Pb-210	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.326E-10	8.277E-10
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.622E-11	2.001E-10	2.591E-10
Pa-231	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.952E-12	1.326E-10	2.033E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.390E-15	2.022E-10	2.385E-09	3.627E-09

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	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Sr-90	Sr-90	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.739E-07	3.260E-12	1.239E-14

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	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.700E-01	1.693E-01	1.678E-01	1.629E-01	1.497E-01	1.112E-01	4.753E-02	6.160E-03	2.430E-03
Am-241	Pu-241	1.000E+00	0.000E+00	1.423E-03	4.055E-03	1.133E-02	2.144E-02	2.149E-02	9.302E-03	1.206E-03	4.755E-04
Am-241	ΣS(j):		1.700E-01	1.707E-01	1.719E-01	1.743E-01	1.711E-01	1.326E-01	5.683E-02	7.366E-03	2.905E-03
Np-237	Am-241	1.000E+00	0.000E+00	5.494E-08	1.641E-07	5.385E-07	1.546E-06	4.437E-06	8.995E-06	1.110E-05	1.088E-05
Np-237	Pu-241	1.000E+00	0.000E+00	2.325E-10	2.021E-09	1.997E-08	1.322E-07	6.500E-07	1.549E-06	1.980E-06	1.947E-06
Np-237	Pu-241	2.450E-05	0.000E+00	7.057E-12	2.019E-11	5.731E-11	1.143E-10	1.464E-10	1.417E-10	1.282E-10	1.225E-10
Np-237	ΣS(j):		0.000E+00	5.518E-08	1.661E-07	5.586E-07	1.678E-06	5.087E-06	1.054E-05	1.308E-05	1.283E-05
U-233	Am-241	1.000E+00	0.000E+00	1.202E-13	1.078E-12	1.182E-11	1.026E-10	1.005E-09	6.444E-09	2.137E-08	2.631E-08
U-233	Pu-241	1.000E+00	0.000E+00	3.403E-16	8.948E-15	3.028E-13	6.439E-12	1.231E-10	1.032E-09	3.715E-09	4.620E-09
U-233	Pu-241	2.450E-05	0.000E+00	1.555E-17	1.355E-16	1.349E-15	9.147E-15	4.941E-14	1.536E-13	3.128E-13	3.546E-13
U-233	ΣS(j):		0.000E+00	1.205E-13	1.087E-12	1.212E-11	1.090E-10	1.128E-09	7.476E-09	2.508E-08	3.093E-08
Th-229	Am-241	1.000E+00	0.000E+00	3.785E-18	1.019E-16	3.737E-15	9.813E-14	3.303E-12	6.878E-11	6.996E-10	1.175E-09
Th-229	Pu-241	1.000E+00	0.000E+00	8.056E-21	6.388E-19	7.333E-17	4.895E-15	3.486E-13	1.027E-11	1.178E-10	2.011E-10
Th-229	Pu-241	2.450E-05	0.000E+00	4.915E-22	1.295E-20	4.415E-19	9.600E-18	1.997E-16	2.140E-15	1.283E-14	1.942E-14
Th-229	ΣS(j):		0.000E+00	3.793E-18	1.026E-16	3.811E-15	1.030E-13	3.651E-12	7.905E-11	8.173E-10	1.377E-09
Co-60	Co-60	1.000E+00	6.690E-03	5.865E-03	4.508E-03	1.795E-03	1.292E-04	1.294E-08	4.845E-20	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	2.550E+00	2.492E+00	2.379E+00	2.024E+00	1.275E+00	2.527E-01	2.482E-03	3.680E-08	2.329E-10
Eu-152	Eu-152	7.208E-01	1.081E-01	1.026E-01	9.249E-02	6.424E-02	2.268E-02	5.927E-04	1.781E-08	2.370E-19	2.648E-24
Eu-152	Eu-152	2.792E-01	4.188E-02	3.976E-02	3.582E-02	2.488E-02	8.784E-03	2.296E-04	6.898E-09	9.180E-20	1.026E-24
Eu-152	ΣS(j):		1.500E-01	1.424E-01	1.283E-01	8.912E-02	3.146E-02	8.222E-04	2.471E-08	3.288E-19	3.674E-24
Gd-152	Eu-152	2.792E-01	0.000E+00	2.619E-16	7.465E-16	2.095E-15	4.075E-15	5.107E-15	5.070E-15	4.915E-15	4.845E-15
Eu-154	Eu-154	1.000E+00	1.400E-02	1.294E-02	1.105E-02	6.365E-03	1.315E-03	5.279E-06	7.504E-13	2.557E-29	8.130E-37
Pu-238	Pu-238	1.840E-09	5.870E-12	5.823E-12	5.732E-12	5.422E-12	4.627E-12	2.657E-12	5.443E-13	1.202E-14	2.119E-15
Pu-238	Pu-238	1.000E+00	3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	2.958E-04	6.534E-06	1.152E-06
Pu-238	ΣS(j):		3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	2.958E-04	6.534E-06	1.152E-06
U-234	Pu-238	1.000E+00	0.000E+00	9.003E-09	2.677E-08	8.648E-08	2.375E-07	5.882E-07	8.352E-07	5.707E-07	4.535E-07
Th-230	Pu-238	1.000E+00	0.000E+00	4.058E-14	3.631E-13	3.951E-12	3.353E-11	3.060E-10	1.687E-09	4.778E-09	5.772E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	5.863E-18	1.575E-16	5.731E-15	1.472E-13	4.599E-12	7.994E-11	5.973E-10	9.038E-10
Pb-210	Pu-238	1.000E+00	0.000E+00	4.530E-20	3.608E-18	4.206E-16	2.909E-14	2.194E-12	6.136E-11	5.457E-10	8.445E-10
Pu-239	Pu-239	1.000E+00	1.020E-01	1.020E-01	1.020E-01	1.019E-01	1.018E-01	1.014E-01	1.002E-01	9.768E-02	9.650E-02
U-235	Pu-239	1.000E+00	0.000E+00	1.004E-10	3.009E-10	9.990E-10	2.964E-09	9.503E-09	2.558E-08	5.201E-08	5.988E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	1.062E-15	9.544E-15	1.055E-13	9.357E-13	9.878E-12	7.694E-11	3.720E-10	5.255E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	1.117E-17	2.963E-16	1.031E-14	2.355E-13	5.376E-12	5.964E-11	3.249E-10	4.665E-10

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Summary : Filter Bed Areas Resident Farmer Scenario (aquatic food only)
File : filter_bed_areas_aquatic.rad

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	9.110E-01	8.681E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	4.837E-07	4.205E-17	1.104E-21
Pu-241	Pu-241	2.450E-05	2.232E-05	2.127E-05	1.932E-05	1.379E-05	5.262E-06	1.807E-07	1.185E-11	1.030E-21	2.705E-26

Pu-241	ΣS(j):		9.110E-01	8.682E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	4.837E-07	4.205E-17	1.104E-21
Sr-90	Sr-90	1.000E+00	5.540E-02	5.400E-02	5.131E-02	4.290E-02	2.572E-02	4.295E-03	2.582E-05	1.176E-10	4.347E-13

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 797.60 seconds
Total water/soil iteration failures = 2.807E+03.

Attachment 5. JN-4 Drainpipe Area with No Aquatic Food (Summary File)

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:14 Page 1
Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.rad

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Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(3)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(4)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(5)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2(6)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2(7)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(8)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(10)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(11)

B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(12)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(13)
B-1	U-233	1.350E-01	1.350E-01	DCF2(14)
B-1	U-234	1.320E-01	1.320E-01	DCF2(15)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(16)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(3)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(4)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(5)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(6)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(9)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(9)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(10)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(11)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(12)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(13)
D-1	U-233	2.890E-04	2.890E-04	DCF3(14)
D-1	U-234	2.830E-04	2.830E-04	DCF3(15)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(16)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(3,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(5,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(5,3)

D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(6,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(8,3)
D-34				
D-34	Pu-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(12,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(13,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(13,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(13,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(14,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(14,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(14,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(15,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(15,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(15,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(16,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(16,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(16,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(3,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(3,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(4,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(5,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(5,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(6,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(8,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(8,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(12,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(12,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(13,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(13,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(14,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(14,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(15,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(15,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(16,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(16,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.
RESRAD, Version 6.3 $T_{1/2}$ Limit = 180 days 06/28/2006 09:14 Page 5
Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.rad

Site-Specific Parameter Summary

User	Used by RESRAD	Parameter

Menu	Parameter	Input	Default	(If different from user input)	Name
R011	Area of contaminated zone (m**2)	6.490E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.524E-01	2.000E+00	---	THICKC
R011	Length parallel to aquifer flow (m)	8.100E+00	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)	1.140E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	3.700E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pu-238	7.400E-02	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Pu-239	3.140E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): Pu-241	2.520E+00	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): Pu-241	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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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)	5.440E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.600E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT

R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	2.440E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.058E-11	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.067E-03	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.067E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.067E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)

R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	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	1.088E-01	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

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Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.rad

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 Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.287E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	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(5)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.131E-02	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.042E-02	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.558E-05	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(13)

R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(13,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.558E-05	ALEACH(13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(13)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)

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Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.rad

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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(16)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(16,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	ALEACH(16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(16)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	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	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-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)
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.300E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT

R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	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)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)

R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

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

Contaminated Zone Dimensions | Initial Soil Concentrations, pCi/g

Area:	64.90 square meters	Am-241	3.700E+00
Thickness:	0.15 meters	Pu-238	7.400E-02
Cover Depth:	0.00 meters	Pu-239	3.140E+00
		Pu-241	2.520E+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	1.140E+02	3.000E+02	1.000E+03
TDOSE(t):	1.007E+00	9.504E-01	8.532E-01	6.363E-01	4.546E-01	3.947E-01	3.882E-01	3.144E-01	1.457E-01
M(t):	4.028E-02	3.802E-02	3.413E-02	2.545E-02	1.819E-02	1.579E-02	1.553E-02	1.258E-02	5.828E-03

Maximum TDOSE(t): 1.309E+01 mrem/yr at t = 781 ± 2 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 = 7.815E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	8.818E-09	0.0000	3.782E-10	0.0000	0.000E+00	0.0000	4.853E-08	0.0000	3.791E-09	0.0000	2.603E-11	0.0000	1.463E-10	0.0000
Pu-238	5.538E-09	0.0000	9.854E-07	0.0000	0.000E+00	0.0000	6.311E-06	0.0000	6.876E-07	0.0000	1.006E-08	0.0000	3.789E-07	0.0000
Pu-239	1.780E-04	0.0000	2.156E-02	0.0016	0.000E+00	0.0000	1.396E-01	0.0107	1.521E-02	0.0012	2.211E-04	0.0000	8.381E-03	0.0006
Pu-241	2.357E-10	0.0000	1.011E-11	0.0000	0.000E+00	0.0000	1.298E-09	0.0000	1.014E-10	0.0000	6.959E-13	0.0000	3.912E-12	0.0000
Total	1.780E-04	0.0000	2.156E-02	0.0016	0.000E+00	0.0000	1.396E-01	0.0107	1.521E-02	0.0012	2.211E-04	0.0000	8.381E-03	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 = 7.815E+02 years
Water Dependent Pathways

Radio-Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	1.116E+01	0.8523	0.000E+00	0.0000	0.000E+00	0.0000	1.721E+00	0.1315	1.213E-02	0.0009	1.051E-03	0.0001	1.289E+01	0.9848
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.378E-06	0.0000
Pu-239	4.656E-25	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.640E-26	0.0000	1.346E-28	0.0000	8.838E-28	0.0000	1.851E-01	0.0141
Pu-241	1.172E-02	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	1.751E-03	0.0001	1.073E-05	0.0000	1.042E-06	0.0000	1.348E-02	0.0010
Total	1.117E+01	0.8532	0.000E+00	0.0000	0.000E+00	0.0000	1.722E+00	0.1316	1.214E-02	0.0009	1.052E-03	0.0001	1.309E+01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:14 Page 13
Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	7.255E-02	0.0720	5.874E-02	0.0583	0.000E+00	0.0000	3.790E-01	0.3764	2.069E-02	0.0205	1.198E-03	0.0012	2.269E-02	0.0225
Pu-238	5.807E-06	0.0000	1.089E-03	0.0011	0.000E+00	0.0000	6.975E-03	0.0069	7.600E-04	0.0008	1.105E-05	0.0000	4.188E-04	0.0004
Pu-239	4.192E-04	0.0004	5.077E-02	0.0504	0.000E+00	0.0000	3.287E-01	0.3264	3.582E-02	0.0356	5.207E-04	0.0005	1.974E-02	0.0196
Pu-241	6.087E-05	0.0001	7.972E-04	0.0008	0.000E+00	0.0000	5.184E-03	0.0051	5.547E-04	0.0006	8.537E-06	0.0000	3.112E-04	0.0003
Total	7.304E-02	0.0725	1.114E-01	0.1106	0.000E+00	0.0000	7.199E-01	0.7149	5.782E-02	0.0574	1.738E-03	0.0017	4.315E-02	0.0429

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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.549E-01	0.5510
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.260E-03	0.0092
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.360E-01	0.4329
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.916E-03	0.0069
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.007E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:14 Page 14
Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	6.516E-02	0.0686	5.276E-02	0.0555	0.000E+00	0.0000	3.406E-01	0.3584	1.860E-02	0.0196	1.076E-03	0.0011	2.038E-02	0.0214
Pu-238	5.756E-06	0.0000	1.079E-03	0.0011	0.000E+00	0.0000	6.913E-03	0.0073	7.532E-04	0.0008	1.095E-05	0.0000	4.151E-04	0.0004
Pu-239	4.187E-04	0.0004	5.072E-02	0.0534	0.000E+00	0.0000	3.284E-01	0.3455	3.578E-02	0.0376	5.201E-04	0.0005	1.972E-02	0.0207
Pu-241	1.312E-04	0.0001	8.182E-04	0.0009	0.000E+00	0.0000	5.318E-03	0.0056	5.491E-04	0.0006	8.337E-06	0.0000	3.192E-04	0.0003
Total	6.572E-02	0.0691	1.054E-01	0.1109	0.000E+00	0.0000	6.812E-01	0.7167	5.568E-02	0.0586	1.616E-03	0.0017	4.083E-02	0.0430

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.986E-01	0.5246

Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.177E-03	0.0097
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.355E-01	0.4582
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.145E-03	0.0075
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.504E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:14 Page 15
Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.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-	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.
Am-241	5.256E-02	0.0616	4.256E-02	0.0499	0.000E+00	0.0000	2.748E-01	0.3220	1.500E-02	0.0176	8.677E-04	0.0010	1.644E-02	0.0193
Pu-238	5.653E-06	0.0000	1.060E-03	0.0012	0.000E+00	0.0000	6.790E-03	0.0080	7.399E-04	0.0009	1.076E-05	0.0000	4.077E-04	0.0005
Pu-239	4.178E-04	0.0005	5.061E-02	0.0593	0.000E+00	0.0000	3.276E-01	0.3840	3.570E-02	0.0418	5.190E-04	0.0006	1.967E-02	0.0231
Pu-241	2.407E-04	0.0003	8.402E-04	0.0010	0.000E+00	0.0000	5.456E-03	0.0064	5.324E-04	0.0006	1.047E-05	0.0000	3.274E-04	0.0004
Total	5.323E-02	0.0624	9.506E-02	0.1114	0.000E+00	0.0000	6.146E-01	0.7204	5.198E-02	0.0609	1.408E-03	0.0017	3.684E-02	0.0432

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.022E-01	0.4714
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.014E-03	0.0106
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.346E-01	0.5093
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.408E-03	0.0087
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.532E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:14 Page 16
Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.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-	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.
Am-241	2.478E-02	0.0389	2.006E-02	0.0315	0.000E+00	0.0000	1.295E-01	0.2036	7.074E-03	0.0111	4.090E-04	0.0006	7.748E-03	0.0122
Pu-238	5.310E-06	0.0000	9.957E-04	0.0016	0.000E+00	0.0000	6.377E-03	0.0100	6.948E-04	0.0011	1.012E-05	0.0000	3.829E-04	0.0006

Pu-239	4.146E-04	0.0007	5.022E-02	0.0789	0.000E+00	0.0000	3.251E-01	0.5109	3.543E-02	0.0557	5.150E-04	0.0008	1.952E-02	0.0307
Pu-241	4.045E-04	0.0006	7.847E-04	0.0012	0.000E+00	0.0000	5.089E-03	0.0080	4.441E-04	0.0007	1.128E-05	0.0000	3.051E-04	0.0005
Total	2.560E-02	0.0402	7.206E-02	0.1132	0.000E+00	0.0000	4.661E-01	0.7325	4.364E-02	0.0686	9.455E-04	0.0015	2.796E-02	0.0439

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.896E-01	0.2980
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.466E-03	0.0133
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.312E-01	0.6777
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.039E-03	0.0111
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.363E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:14 Page 17
Summary : JN-4 Drainpipe Resident Farmer Scenario (no aquatic food)
File : JN-4_drainpipe.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-	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.
Am-241	2.894E-03	0.0064	2.340E-03	0.0051	0.000E+00	0.0000	1.513E-02	0.0333	8.266E-04	0.0018	4.771E-05	0.0001	9.036E-04	0.0020
Pu-238	4.438E-06	0.0000	8.322E-04	0.0018	0.000E+00	0.0000	5.330E-03	0.0117	5.808E-04	0.0013	8.468E-06	0.0000	3.200E-04	0.0007
Pu-239	4.056E-04	0.0009	4.913E-02	0.1081	0.000E+00	0.0000	3.181E-01	0.6996	3.466E-02	0.0762	5.039E-04	0.0011	1.910E-02	0.0420
Pu-241	2.708E-04	0.0006	3.901E-04	0.0009	0.000E+00	0.0000	2.527E-03	0.0056	2.001E-04	0.0004	5.190E-06	0.0000	1.514E-04	0.0003
Total	3.575E-03	0.0079	5.269E-02	0.1159	0.000E+00	0.0000	3.411E-01	0.7502	3.627E-02	0.0798	5.662E-04	0.0012	2.047E-02	0.0450

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.214E-02	0.0487
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.076E-03	0.0156
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.219E-01	0.9279
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.546E-03	0.0078
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.546E-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-	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.
Am-241	4.064E-06	0.0000	1.374E-06	0.0000	0.000E+00	0.0000	2.195E-05	0.0001	1.522E-06	0.0000	3.322E-08	0.0000	5.308E-07	0.0000
Pu-238	2.369E-06	0.0000	4.442E-04	0.0011	0.000E+00	0.0000	2.845E-03	0.0072	3.100E-04	0.0008	4.527E-06	0.0000	1.708E-04	0.0004
Pu-239	3.757E-04	0.0010	4.550E-02	0.1153	0.000E+00	0.0000	2.946E-01	0.7465	3.210E-02	0.0813	4.667E-04	0.0012	1.769E-02	0.0448
Pu-241	1.041E-05	0.0000	1.384E-05	0.0000	0.000E+00	0.0000	8.994E-05	0.0002	6.903E-06	0.0000	2.259E-07	0.0000	5.368E-06	0.0000
Total	3.925E-04	0.0010	4.596E-02	0.1165	0.000E+00	0.0000	2.975E-01	0.7539	3.242E-02	0.0821	4.714E-04	0.0012	1.787E-02	0.0453

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.947E-05	0.0001
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.777E-03	0.0096
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.907E-01	0.9900
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.267E-04	0.0003
Total	0.000E+00	0.0000	0.000E+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-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 = 1.140E+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.
Am-241	2.573E-06	0.0000	3.768E-07	0.0000	0.000E+00	0.0000	1.408E-05	0.0000	1.057E-06	0.0000	1.231E-08	0.0000	1.457E-07	0.0000
Pu-238	2.090E-06	0.0000	3.918E-04	0.0010	0.000E+00	0.0000	2.510E-03	0.0065	2.734E-04	0.0007	3.993E-06	0.0000	1.507E-04	0.0004
Pu-239	3.700E-04	0.0010	4.481E-02	0.1154	0.000E+00	0.0000	2.901E-01	0.7473	3.161E-02	0.0814	4.596E-04	0.0012	1.742E-02	0.0449
Pu-241	5.261E-06	0.0000	6.955E-06	0.0000	0.000E+00	0.0000	4.535E-05	0.0001	3.480E-06	0.0000	1.137E-07	0.0000	2.699E-06	0.0000
Total	3.799E-04	0.0010	4.521E-02	0.1165	0.000E+00	0.0000	2.927E-01	0.7540	3.189E-02	0.0821	4.637E-04	0.0012	1.757E-02	0.0453

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

As mrem/yr and Fraction of Total Dose At t = 1.140E+02 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.824E-05	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.332E-03	0.0086
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.848E-01	0.9912
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.386E-05	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	3.882E-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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	4.764E-07	0.0000	2.040E-08	0.0000	0.000E+00	0.0000	2.624E-06	0.0000	2.050E-07	0.0000	1.407E-09	0.0000	7.908E-09	0.0000
Pu-238	3.945E-07	0.0000	7.391E-05	0.0002	0.000E+00	0.0000	4.734E-04	0.0015	5.158E-05	0.0002	7.534E-07	0.0000	2.843E-05	0.0001
Pu-239	3.017E-04	0.0010	3.654E-02	0.1162	0.000E+00	0.0000	2.366E-01	0.7525	2.578E-02	0.0820	3.748E-04	0.0012	1.421E-02	0.0452
Pu-241	1.329E-08	0.0000	1.283E-09	0.0000	0.000E+00	0.0000	7.494E-08	0.0000	5.848E-09	0.0000	4.966E-11	0.0000	4.977E-10	0.0000
Total	3.026E-04	0.0010	3.662E-02	0.1165	0.000E+00	0.0000	2.371E-01	0.7540	2.583E-02	0.0822	3.756E-04	0.0012	1.423E-02	0.0453

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.335E-06	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.285E-04	0.0020
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.138E-01	0.9980
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.591E-08	0.0000
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-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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	1.448E-09	0.0000	6.264E-11	0.0000	0.000E+00	0.0000	7.937E-09	0.0000	6.200E-10	0.0000	4.265E-12	0.0000	2.400E-11	0.0000
Pu-238	1.022E-09	0.0000	1.389E-07	0.0000	0.000E+00	0.0000	8.897E-07	0.0000	9.694E-08	0.0000	1.428E-09	0.0000	5.341E-08	0.0000
Pu-239	1.401E-04	0.0010	1.697E-02	0.1164	0.000E+00	0.0000	1.099E-01	0.7539	1.197E-02	0.0821	1.740E-04	0.0012	6.596E-03	0.0453
Pu-241	3.869E-11	0.0000	1.671E-12	0.0000	0.000E+00	0.0000	2.122E-10	0.0000	1.658E-11	0.0000	1.140E-13	0.0000	6.412E-13	0.0000
Total	1.401E-04	0.0010	1.697E-02	0.1164	0.000E+00	0.0000	1.099E-01	0.7539	1.197E-02	0.0821	1.740E-04	0.0012	6.596E-03	0.0453

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	3.959E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.119E-07	0.0000	8.475E-08	0.0000	9.882E-10	0.0000	4.667E-06	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.181E-06	0.0000
Pu-239	1.671E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.567E-18	0.0000	7.096E-21	0.0000	1.561E-20	0.0000	1.457E-01	0.9999
Pu-241	7.324E-06	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.128E-06	0.0000	9.698E-09	0.0000	7.017E-10	0.0000	8.463E-06	0.0001
Total	1.128E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.740E-06	0.0000	9.444E-08	0.0000	1.690E-09	0.0000	1.457E-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	1.140E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.500E-01	1.348E-01	1.087E-01	5.124E-02	5.975E-03	3.236E-06	7.191E-07	1.506E-15	4.331E-10
Am-241	Np-237+D	1.000E+00	4.912E-07	1.451E-06	3.071E-06	6.438E-06	8.036E-06	4.729E-06	4.211E-06	9.015E-07	1.260E-06
Am-241	U-233	1.000E+00	1.271E-14	7.140E-14	3.102E-13	1.854E-12	6.268E-12	6.802E-12	6.175E-12	1.363E-12	6.990E-10
Am-241	Th-229+D	1.000E+00	5.081E-18	7.126E-17	7.621E-16	1.551E-14	1.954E-13	1.315E-12	1.506E-12	2.728E-12	2.895E-12
Am-241	ΣDSR(j)		1.500E-01	1.348E-01	1.087E-01	5.124E-02	5.983E-03	7.965E-06	4.930E-06	9.015E-07	1.261E-06
Pu-238	Pu-238	1.840E-09	2.302E-10	2.282E-10	2.241E-10	2.105E-10	1.759E-10	9.392E-11	8.284E-11	1.563E-11	2.936E-14
Pu-238	Pu-238	1.000E+00	1.251E-01	1.240E-01	1.218E-01	1.144E-01	9.562E-02	5.104E-02	4.502E-02	8.493E-03	1.596E-05
Pu-238	U-234	1.000E+00	5.139E-08	1.534E-07	3.426E-07	8.653E-07	1.562E-06	1.257E-06	1.123E-06	2.165E-07	4.067E-10
Pu-238	Th-230	1.000E+00	1.473E-13	9.664E-13	4.825E-12	3.794E-11	2.334E-10	1.043E-09	1.169E-09	1.937E-09	2.055E-09
Pu-238	Ra-226+D	1.000E+00	2.563E-15	3.861E-14	4.380E-13	1.016E-11	1.689E-10	1.837E-09	2.203E-09	4.837E-09	5.338E-09
Pu-238	Pb-210+D	1.000E+00	9.945E-18	2.616E-16	5.677E-15	3.452E-13	1.432E-11	3.411E-10	4.325E-10	1.193E-09	1.354E-09
Pu-238	ΣDSR(j)		1.251E-01	1.240E-01	1.218E-01	1.144E-01	9.562E-02	5.104E-02	4.502E-02	8.493E-03	1.597E-05
Pu-239	Pu-239	1.000E+00	1.388E-01	1.387E-01	1.384E-01	1.373E-01	1.344E-01	1.244E-01	1.225E-01	9.994E-02	4.640E-02
Pu-239	U-235+D	1.000E+00	1.812E-10	5.342E-10	1.196E-09	3.102E-09	6.173E-09	7.844E-09	7.778E-09	6.399E-09	2.971E-09
Pu-239	Pa-231	1.000E+00	1.605E-14	1.174E-13	6.053E-13	4.525E-12	2.250E-11	5.325E-11	5.417E-11	4.649E-11	2.159E-11
Pu-239	Ac-227+D	1.000E+00	8.472E-17	1.044E-15	9.971E-15	1.728E-13	1.617E-12	5.210E-12	5.354E-12	4.674E-12	2.170E-12

Pu-239	ΣDSR(j)		1.388E-01	1.387E-01	1.384E-01	1.373E-01	1.344E-01	1.244E-01	1.225E-01	9.994E-02	4.640E-02
Pu-241	Pu-241	1.000E+00	2.618E-03	2.492E-03	2.259E-03	1.601E-03	5.983E-04	1.910E-05	9.593E-06	1.017E-09	1.121E-24
Pu-241	Am-241	1.000E+00	1.209E-04	3.377E-04	6.758E-04	1.189E-03	8.073E-04	3.094E-05	1.556E-05	1.652E-09	3.317E-06
Pu-241	Np-237+D	1.000E+00	2.523E-10	1.776E-09	8.654E-09	5.449E-08	1.804E-07	1.802E-07	1.625E-07	3.533E-08	4.147E-08
Pu-241	U-233	1.000E+00	5.508E-18	6.540E-17	6.115E-16	1.057E-14	9.828E-14	2.365E-13	2.235E-13	5.340E-14	2.043E-11
Pu-241	Th-229+D	1.000E+00	1.656E-21	4.740E-20	1.085E-18	6.380E-17	2.156E-15	3.270E-14	3.950E-14	8.683E-14	9.413E-14
Pu-241	ΣDSR(j)		2.739E-03	2.830E-03	2.934E-03	2.790E-03	1.406E-03	5.023E-05	2.532E-05	3.800E-08	3.358E-06
Pu-241+D	Pu-241+D	2.450E-05	5.806E-06	5.527E-06	5.009E-06	3.550E-06	1.327E-06	4.237E-08	2.128E-08	2.256E-12	2.486E-27
Pu-241+D	Np-237+D	2.450E-05	1.226E-11	3.713E-11	8.294E-11	2.062E-10	3.574E-10	2.762E-10	2.477E-10	5.352E-11	1.618E-13
Pu-241+D	U-233	2.450E-05	3.163E-19	1.808E-18	8.143E-18	5.483E-17	2.410E-16	3.771E-16	3.501E-16	8.089E-17	2.446E-19
Pu-241+D	Th-229+D	2.450E-05	1.259E-22	1.788E-21	1.964E-20	4.368E-19	6.706E-18	6.130E-17	7.204E-17	1.441E-16	1.508E-16
Pu-241+D	ΣDSR(j)		5.806E-06	5.527E-06	5.009E-06	3.550E-06	1.327E-06	4.264E-08	2.152E-08	5.578E-11	1.620E-13

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	1.000E+03
Am-241	1.667E+02	1.855E+02	2.300E+02	4.879E+02	4.178E+03	3.139E+06	5.071E+06	2.773E+07	1.982E+07
Pu-238	1.998E+02	2.016E+02	2.052E+02	2.185E+02	2.614E+02	4.898E+02	5.553E+02	2.944E+03	1.566E+06
Pu-239	1.801E+02	1.803E+02	1.806E+02	1.820E+02	1.861E+02	2.009E+02	2.040E+02	2.502E+02	5.388E+02
Pu-241	9.109E+03	8.817E+03	8.505E+03	8.950E+03	1.777E+04	4.973E+05	9.866E+05	6.569E+08	7.444E+06

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 = 781 ± 2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	3.700E+00	781 ± 2	3.483E+00	7.177E+00	3.483E+00	7.177E+00
Pu-238	7.400E-02	0.000E+00	1.251E-01	1.998E+02	1.132E-04	2.208E+05
Pu-239	3.140E+00	0.000E+00	1.388E-01	1.801E+02	5.896E-02	4.240E+02
Pu-241	2.520E+00	794 ± 2	3.009E-02	8.308E+02	5.348E-03	4.674E+03

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated
DOSE(j,t), mrem/yr

Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	1.000E+03

Am-241	Am-241	1.000E+00	5.549E-01	4.986E-01	4.022E-01	1.896E-01	2.211E-02	1.197E-05	2.661E-06	5.571E-15	1.602E-09
Am-241	Pu-241	1.000E+00	3.046E-04	8.509E-04	1.703E-03	2.996E-03	2.034E-03	7.797E-05	3.922E-05	4.164E-09	8.358E-06
Am-241	ΣDOSE(j)		5.552E-01	4.994E-01	4.039E-01	1.926E-01	2.414E-02	8.995E-05	4.188E-05	4.164E-09	8.360E-06
Np-237	Am-241	1.000E+00	1.817E-06	5.368E-06	1.136E-05	2.382E-05	2.973E-05	1.750E-05	1.558E-05	3.335E-06	4.662E-06
Np-237	Pu-241	1.000E+00	6.357E-10	4.476E-09	2.181E-08	1.373E-07	4.546E-07	4.541E-07	4.094E-07	8.904E-08	1.045E-07
Np-237	Pu-241	2.450E-05	3.090E-11	9.356E-11	2.090E-10	5.196E-10	9.006E-10	6.960E-10	6.243E-10	1.349E-10	4.078E-13
Np-237	ΣDOSE(j)		1.818E-06	5.372E-06	1.138E-05	2.396E-05	3.019E-05	1.795E-05	1.599E-05	3.425E-06	4.767E-06
U-233	Am-241	1.000E+00	4.702E-14	2.642E-13	1.148E-12	6.859E-12	2.319E-11	2.517E-11	2.285E-11	5.042E-12	2.586E-09
U-233	Pu-241	1.000E+00	1.388E-17	1.648E-16	1.541E-15	2.664E-14	2.477E-13	5.960E-13	5.631E-13	1.346E-13	5.149E-11
U-233	Pu-241	2.450E-05	7.970E-19	4.555E-18	2.052E-17	1.382E-16	6.073E-16	9.502E-16	8.823E-16	2.039E-16	6.165E-19
U-233	ΣDOSE(j)		4.704E-14	2.644E-13	1.149E-12	6.886E-12	2.344E-11	2.576E-11	2.341E-11	5.177E-12	2.638E-09
Th-229	Am-241	1.000E+00	1.880E-17	2.637E-16	2.820E-15	5.740E-14	7.231E-13	4.864E-12	5.571E-12	1.009E-11	1.071E-11
Th-229	Pu-241	1.000E+00	4.174E-21	1.195E-19	2.735E-18	1.608E-16	5.434E-15	8.240E-14	9.955E-14	2.188E-13	2.372E-13
Th-229	Pu-241	2.450E-05	3.174E-22	4.506E-21	4.949E-20	1.101E-18	1.690E-17	1.545E-16	1.815E-16	3.621E-16	3.800E-16
Th-229	ΣDOSE(j)		1.880E-17	2.638E-16	2.823E-15	5.756E-14	7.285E-13	4.947E-12	5.671E-12	1.031E-11	1.095E-11
Pu-238	Pu-238	1.840E-09	1.704E-11	1.689E-11	1.659E-11	1.558E-11	1.302E-11	6.950E-12	6.130E-12	1.156E-12	2.173E-15
Pu-238	Pu-238	1.000E+00	9.260E-03	9.177E-03	9.014E-03	8.466E-03	7.076E-03	3.777E-03	3.332E-03	6.285E-04	1.181E-06
Pu-238	ΣDOSE(j)		9.260E-03	9.177E-03	9.014E-03	8.466E-03	7.076E-03	3.777E-03	3.332E-03	6.285E-04	1.181E-06
U-234	Pu-238	1.000E+00	3.803E-09	1.135E-08	2.535E-08	6.403E-08	1.156E-07	9.298E-08	8.310E-08	1.602E-08	3.010E-11
Th-230	Pu-238	1.000E+00	1.090E-14	7.152E-14	3.570E-13	2.807E-12	1.727E-11	7.719E-11	8.647E-11	1.433E-10	1.521E-10
Ra-226	Pu-238	1.000E+00	1.896E-16	2.857E-15	3.241E-14	7.517E-13	1.250E-11	1.359E-10	1.631E-10	3.580E-10	3.950E-10
Pb-210	Pu-238	1.000E+00	7.359E-19	1.936E-17	4.201E-16	2.555E-14	1.059E-12	2.524E-11	3.208E-11	8.827E-11	1.002E-10
Pu-239	Pu-239	1.000E+00	4.360E-01	4.355E-01	4.346E-01	4.312E-01	4.219E-01	3.907E-01	3.848E-01	3.138E-01	1.457E-01
U-235	Pu-239	1.000E+00	5.691E-10	1.677E-09	3.754E-09	9.742E-09	1.938E-08	2.463E-08	2.442E-08	2.009E-08	9.329E-09
Pa-231	Pu-239	1.000E+00	5.039E-14	3.687E-13	1.901E-12	1.421E-11	7.066E-11	1.672E-10	1.701E-10	1.460E-10	6.779E-11
Ac-227	Pu-239	1.000E+00	2.660E-16	3.277E-15	3.131E-14	5.426E-13	5.079E-12	1.636E-11	1.681E-11	1.468E-11	6.815E-12
Pu-241	Pu-241	1.000E+00	6.597E-03	6.281E-03	5.692E-03	4.034E-03	1.508E-03	4.814E-05	2.418E-05	2.564E-09	2.825E-24
Pu-241	Pu-241	2.450E-05	1.463E-05	1.393E-05	1.262E-05	8.945E-06	3.344E-06	1.068E-07	5.361E-06	5.685E-12	6.265E-27
Pu-241	ΣDOSE(j)		6.612E-03	6.294E-03	5.705E-03	4.042E-03	1.511E-03	4.825E-05	2.423E-05	2.569E-09	2.831E-24

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	1.140E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	3.700E+00	3.323E+00	2.681E+00	1.264E+00	1.474E-01	7.981E-05	1.773E-05	3.713E-14	0.000E+00
Am-241	Pu-241	1.000E+00	0.000E+00	3.737E-03	9.598E-03	1.873E-02	1.309E-02	5.049E-04	2.540E-04	2.696E-08	2.971E-23
Am-241	ΣS(j):		3.700E+00	3.327E+00	2.690E+00	1.282E+00	1.604E-01	5.847E-04	2.717E-04	2.697E-08	2.971E-23
Np-237	Am-241	1.000E+00	0.000E+00	1.132E-06	3.033E-06	6.998E-06	8.945E-06	5.277E-06	4.699E-06	1.006E-06	3.041E-09
Np-237	Pu-241	1.000E+00	0.000E+00	6.196E-10	5.004E-09	3.855E-08	1.351E-07	1.369E-07	1.234E-07	2.685E-08	8.119E-11
Np-237	Pu-241	2.450E-05	0.000E+00	1.943E-11	5.507E-11	1.511E-10	2.695E-10	2.098E-10	1.882E-10	4.067E-11	1.230E-13
Np-237	ΣS(j):		0.000E+00	1.132E-06	3.039E-06	7.036E-06	9.080E-06	5.414E-06	4.822E-06	1.033E-06	3.123E-09
U-233	Am-241	1.000E+00	0.000E+00	2.486E-12	2.017E-11	1.578E-10	5.778E-10	6.400E-10	5.812E-10	1.284E-10	3.881E-13
U-233	Pu-241	1.000E+00	0.000E+00	9.060E-16	2.207E-14	5.751E-13	6.052E-12	1.512E-11	1.430E-11	3.426E-12	1.036E-14
U-233	Pu-241	2.450E-05	0.000E+00	4.229E-17	3.562E-16	3.145E-15	1.503E-14	2.413E-14	2.243E-14	5.190E-15	1.570E-17
U-233	ΣS(j):		0.000E+00	2.487E-12	2.019E-11	1.584E-10	5.839E-10	6.552E-10	5.956E-10	1.318E-10	3.985E-13

Th-229	Am-241	1.000E+00	0.000E+00	7.930E-17	1.981E-15	5.648E-14	7.841E-13	5.433E-12	6.230E-12	1.133E-11	1.170E-11
Th-229	Pu-241	1.000E+00	0.000E+00	2.161E-20	1.613E-18	1.505E-16	5.807E-15	9.183E-14	1.111E-13	2.456E-13	2.603E-13
Th-229	Pu-241	2.450E-05	0.000E+00	1.342E-21	3.449E-20	1.076E-18	1.825E-17	1.724E-16	2.028E-16	4.076E-16	4.268E-16
Th-229	ΣS(j):		0.000E+00	7.932E-17	1.982E-15	5.663E-14	7.899E-13	5.525E-12	6.341E-12	1.158E-11	1.196E-11
Pu-238	Pu-238	1.840E-09	1.362E-10	1.349E-10	1.325E-10	1.245E-10	1.040E-10	5.554E-11	4.899E-11	9.241E-12	1.736E-14
Pu-238	Pu-238	1.000E+00	7.400E-02	7.334E-02	7.204E-02	6.765E-02	5.655E-02	3.018E-02	2.662E-02	5.022E-03	9.436E-06
Pu-238	ΣS(j):		7.400E-02	7.334E-02	7.204E-02	6.765E-02	5.655E-02	3.018E-02	2.662E-02	5.022E-03	9.436E-06
U-234	Pu-238	1.000E+00	0.000E+00	2.045E-07	5.828E-07	1.629E-06	3.030E-06	2.459E-06	2.198E-06	4.239E-07	7.965E-10
Th-230	Pu-238	1.000E+00	0.000E+00	9.282E-13	8.074E-12	7.984E-11	5.260E-10	2.405E-09	2.697E-09	4.485E-09	4.761E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	1.336E-16	3.462E-15	1.113E-13	2.036E-12	2.286E-11	2.747E-11	6.062E-11	6.694E-11
Pb-210	Pu-238	1.000E+00	0.000E+00	1.031E-18	7.918E-17	8.118E-15	3.936E-13	9.892E-12	1.260E-11	3.497E-11	3.974E-11
Pu-239	Pu-239	1.000E+00	3.140E+00	3.137E+00	3.130E+00	3.106E+00	3.038E+00	2.814E+00	2.771E+00	2.260E+00	1.049E+00
U-235	Pu-239	1.000E+00	0.000E+00	3.026E-09	8.695E-09	2.504E-08	5.137E-08	6.580E-08	6.525E-08	5.369E-08	2.493E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	3.179E-14	2.702E-13	2.466E-12	1.301E-11	3.133E-11	3.188E-11	2.739E-11	1.272E-11
Ac-227	Pu-239	1.000E+00	0.000E+00	3.284E-16	7.942E-15	2.032E-13	2.133E-12	7.099E-12	7.302E-12	6.384E-12	2.964E-12
Pu-241	Pu-241	1.000E+00	2.520E+00	2.399E+00	2.174E+00	1.541E+00	5.759E-01	1.839E-02	9.234E-03	9.792E-07	1.079E-21
Pu-241	Pu-241	2.450E-05	6.174E-05	5.878E-05	5.327E-05	3.775E-05	1.411E-05	4.505E-07	2.262E-07	2.399E-11	2.644E-26
Pu-241	ΣS(j):		2.520E+00	2.399E+00	2.174E+00	1.541E+00	5.759E-01	1.839E-02	9.234E-03	9.792E-07	1.079E-21

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 151.63 seconds

Attachment 6. JN-4 Drainpipe Area with Aquatic Food Only (Summary File)

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:18 Page 1
Summary : JN-4 Drainpipe Resident Farmer Scenario (aquatic food only)
File : JN-4_drainpipe_aquatic.rad

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RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:18 Page 2
Summary : JN-4 Drainpipe Resident Farmer Scenario (aquatic food only)
File : JN-4_drainpipe_aquatic.rad

Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(3)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(4)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(5)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2(6)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2(8)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(9)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(10)

B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(11)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(12)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(13)
B-1	U-233	1.350E-01	1.350E-01	DCF2(14)
B-1	U-234	1.320E-01	1.320E-01	DCF2(15)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(16)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(3)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(4)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(5)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(6)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(8)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(9)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(10)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(11)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(12)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(13)
D-1	U-233	2.890E-04	2.890E-04	DCF3(14)
D-1	U-234	2.830E-04	2.830E-04	DCF3(15)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(16)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(3,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(3,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(4,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(4,3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(5,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(5,2)

D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(5,3)
D-34				
D-34	Pu-238 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Pu-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Pu-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(6,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(8,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(8,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(8,3)
D-34				
D-34	Pu-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(9,1)
D-34	Pu-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(9,2)
D-34	Pu-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(9,3)
D-34				
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(10,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(10,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(10,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(12,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(13,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(13,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(13,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(14,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(14,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(14,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(15,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(15,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(15,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(16,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(16,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(16,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(3,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(3,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(4,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(4,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(5,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(5,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(6,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(8,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(8,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(9,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(10,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(10,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(12,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(12,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(13,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(13,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(14,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(14,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(15,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(15,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(16,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(16,2)

*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)	6.490E+01	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.524E-01	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	8.100E+00	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)	1.140E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	7.810E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	3.700E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Pu-238	7.400E-02	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Pu-239	3.140E+00	0.000E+00	---	S1(8)
R012	Initial principal radionuclide (pCi/g): Pu-241	2.520E+00	0.000E+00	---	S1(9)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(8)
R012	Concentration in groundwater (pCi/L): Pu-241	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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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)	5.440E+06	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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.300E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ

R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	3.050E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.098E-01	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(6)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(6,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.067E-03	ALEACH(6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(6)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.067E-03	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)
R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.067E-03	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)

R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	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	1.058E-01	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E-02	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.287E-03	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	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(5)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.131E-02	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.042E-02	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.588E-15	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for daughter Th-230				

R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(13)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(13,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.55[illegible]E-05	ALEACH(13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(13)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)

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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(16)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(16,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.255E-02	ALEACH(16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(16)
R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	not used	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	not used	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)
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)

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Summary : JN-4 Drainpipe Resident Farmer Scenario (aquatic food only)
File : JN-4_drainpipe_aquatic.rad

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	5.400E+00	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	not used	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	1.000E+00	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)	not used	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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)

STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
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	suppressed
2 -- inhalation (w/o radon)	suppressed
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	active
7 -- drinking water	suppressed
8 -- soil ingestion	suppressed
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions Initial Soil Concentrations, pCi/g

Area:	64.90 square meters	Am-241	3.700E+00
Thickness:	0.15 meters	Pu-238	7.400E-02
Cover Depth:	0.00 meters	Pu-239	3.140E+00
		Pu-241	2.520E+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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.596E-03	1.610E-03	1.234E-08	1.184E-09	1.202E-09
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.639E-04	6.439E-05	5.338E-10	4.736E-11	4.809E-11

Maximum TDOSE(t): 6.816E-03 mrem/yr at t = 99.7 ± 0.2 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 = 9.967E+01 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.967E+01 years
Water Dependent Pathways

Radio-Nuclide Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	6.812E-03	0.9994	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.812E-03	0.9994
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	6.103E-20	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.103E-20	0.0000
Pu-241	0.000E+00	0.0000	4.005E-06	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.005E-06	0.0006
Total	0.000E+00	0.0000	6.816E-03	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.816E-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 = 0.000E+00 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:18 Page 14
Summary : JN-4 Drainpipe Resident Farmer Scenario (aquatic food only)
File : JN-4_drainpipe_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.

Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:18 Page 15
Summary : JN-4 Drainpipe Resident Farmer Scenario (aquatic food only)
File : JN-4_drainpipe_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:18 Page 16
Summary : JN-4 Drainpipe Resident Farmer Scenario (aquatic food only)
File : JN-4_drainpipe_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

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Summary : JN-4 Drainpipe Resident Farmer Scenario (aquatic food only)
File : JN-4_drainpipe_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	6.590E-03	0.9991	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.590E-03	0.9991
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	1.709E-19	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.709E-19	0.0000
Pu-241	0.000E+00	0.0000	6.224E-06	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.224E-06	0.0009
Total	0.000E+00	0.0000	6.596E-03	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.596E-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 = 1.140E+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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.140E+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.
Am-241	0.000E+00	0.0000	1.571E-03	0.9762	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.571E-03	0.9762
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	7.521E-16	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.521E-16	0.0000
Pu-241	0.000E+00	0.0000	3.835E-05	0.0238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.835E-05	0.0238
Total	0.000E+00	0.0000	1.610E-03	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.610E-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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	1.135E-09	0.0850	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.135E-09	0.0850
Pu-238	0.000E+00	0.0000	2.275E-11	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.275E-11	0.0017
Pu-239	0.000E+00	0.0000	2.785E-12	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.785E-12	0.0002
Pu-241	0.000E+00	0.0000	1.218E-08	0.9131	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.218E-08	0.9131
Total	0.000E+00	0.0000	1.334E-08	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.334E-08	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 = 7.810E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.810E+02 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	1.153E-09	0.9736	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.153E-09	0.9736
Pu-238	0.000E+00	0.0000	2.361E-12	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.361E-12	0.0020
Pu-239	0.000E+00	0.0000	2.909E-12	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.909E-12	0.0025
Pu-241	0.000E+00	0.0000	2.604E-11	0.0220	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.604E-11	0.0220
Total	0.000E+00	0.0000	1.184E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.184E-09	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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.

Am-241	0.000E+00	0.0000	1.172E-09	0.9745	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-09	0.9745
Pu-238	0.000E+00	0.0000	1.640E-12	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E-12	0.0014
Pu-239	0.000E+00	0.0000	2.771E-12	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.771E-12	0.0023
Pu-241	0.000E+00	0.0000	2.624E-11	0.0218	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.624E-11	0.0218
Total	0.000E+00	0.0000	1.202E-09	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.202E-09	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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.781E-03	4.247E-04	2.272E-12	9.241E-34	1.682E-43
Am-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.933E-11	2.367E-10	3.043E-10	3.115E-10	3.166E-10
Am-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.354E-18	1.085E-15	2.827E-14	2.517E-14	2.322E-14
Am-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.880E-20	6.160E-19	9.366E-17	2.191E-16	2.754E-16
Am-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.781E-03	4.247E-04	3.066E-10	3.116E-10	3.166E-10
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	U-234	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.075E-10	1.547E-11	3.232E-12
Pu-238	Th-230	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.216E-16	7.634E-15	7.800E-15
Pu-238	Ra-226+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.510E-16	1.227E-12	1.391E-12
Pu-238	Pb-210+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.521E-11	1.754E-11
Pu-238	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.075E-10	3.191E-11	2.217E-11
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	U-235+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.163E-13	1.606E-13	1.597E-13
Pu-239	Pa-231	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.460E-14	1.347E-13	1.588E-13
Pu-239	Ac-227+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.444E-20	2.395E-16	7.260E-13	6.310E-13	5.641E-13
Pu-239	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.444E-20	2.395E-16	8.869E-13	9.263E-13	8.825E-13
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.470E-06	1.522E-05	4.825E-09	9.903E-19	3.846E-23
Pu-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.818E-14	2.697E-12	1.005E-11	1.033E-11	1.041E-11
Pu-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.533E-21	7.549E-15	8.618E-16	8.527E-16	7.855E-16
Pu-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.351E-23	6.565E-21	2.044E-18	7.139E-18	8.943E-18
Pu-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.470E-06	1.522E-05	4.835E-09	1.033E-11	1.041E-11
Pu-241+D	Pu-241+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	Np-237+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	U-233	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.942E-20	1.477E-19	1.471E-19
Pu-241+D	Th-229+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.760E-24	1.440E-22	1.817E-22
Pu-241+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.942E-20	1.479E-19	1.472E-19

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	1.404E+04	5.886E+04	8.153E+10	8.024E+10	7.896E+10
Pu-238	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	8.130E+10	7.834E+11	1.128E+12
Pu-239	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10
Pu-241	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	1.012E+07	1.643E+06	5.171E+09	2.420E+12	2.401E+12

*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 = 99.7 ± 0.2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	3.700E+00	99.7 ± 0.2	1.841E-03	1.358E+04	1.841E-03	1.358E+04
Pu-238	7.400E-02	321.3 ± 0.6	3.357E-10	7.447E+10	0.000E+00	*1.712E+13
Pu-239	3.140E+00	396.7 ± 0.8	1.031E-12	*6.214E+10	1.944E-20	*6.214E+10
Pu-241	2.520E+00	113.3 ± 0.2	1.524E-05	1.641E+06	1.589E-06	1.573E+07

*At specific activity limit

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated
DOSE(j,t), mrem/yr

Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.590E-03	1.571E-03	8.406E-12	0.000E+00	0.000E+00
Am-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.224E-06	3.835E-05	1.216E-08	2.496E-18	9.693E-23
Am-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.596E-03	1.610E-03	1.217E-08	2.496E-18	9.693E-23
Np-237	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.455E-10	8.757E-10	1.126E-09	1.153E-09	1.171E-09
Np-237	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.621E-14	6.795E-12	2.534E-11	2.603E-11	2.624E-11
Np-237	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.456E-10	8.825E-10	1.151E-09	1.179E-09	1.198E-09
U-233	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.351E-17	3.903E-15	1.046E-13	9.313E-14	8.590E-14
U-233	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.904E-21	1.901E-17	2.172E-15	2.149E-15	1.979E-15
U-233	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.497E-19	3.722E-19	3.706E-19
U-233	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.352E-17	3.922E-15	1.068E-13	9.528E-14	8.788E-14
Th-229	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.176E-19	2.279E-18	3.465E-16	8.108E-16	1.019E-15
Th-229	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.600E-22	1.654E-20	5.150E-18	1.799E-17	2.254E-17
Th-229	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.703E-23	3.629E-22	4.579E-22
Th-229	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.177E-19	2.296E-18	3.517E-16	8.288E-16	1.041E-15
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.275E-11	1.145E-12	2.391E-13
Th-230	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.060E-17	5.649E-16	5.772E-16
Ra-226	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.118E-17	9.078E-14	1.029E-13
Pb-210	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.125E-12	1.298E-12
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.652E-13	5.042E-13	5.014E-13
Pa-231	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.401E-13	4.229E-13	4.985E-13
Ac-227	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.709E-19	7.521E-16	2.280E-12	1.981E-12	1.771E-12
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated
S(j,t), pCi/g

Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	3.700E+00	3.323E+00	2.681E+00	1.264E+00	1.474E-01	7.981E-05	1.773E-05	3.713E-14	1.335E-36	0.000E+00
Am-241	Pu-241	1.000E+00	0.000E+00	3.737E-03	9.598E-03	1.873E-02	1.309E-02	5.049E-04	2.540E-04	2.696E-08	1.421E-18	2.971E-23
Am-241	ΣS(j):		3.700E+00	3.327E+00	2.690E+00	1.282E+00	1.604E-01	5.847E-04	2.717E-04	2.697E-08	1.421E-18	2.971E-23
Np-237	Am-241	1.000E+00	0.000E+00	1.132E-06	3.033E-06	6.998E-06	8.945E-06	5.277E-06	4.699E-06	1.006E-06	1.868E-08	3.041E-09
Np-237	Pu-241	1.000E+00	0.000E+00	6.196E-10	5.004E-09	3.855E-08	1.351E-07	1.369E-07	1.234E-07	2.685E-08	4.986E-10	8.119E-11
Np-237	Pu-241	2.450E-05	0.000E+00	1.943E-11	5.507E-11	1.511E-10	2.695E-10	2.098E-10	1.882E-10	4.067E-11	7.553E-13	1.230E-13
Np-237	ΣS(j):		0.000E+00	1.132E-06	3.039E-06	7.036E-06	9.080E-06	5.414E-06	4.822E-06	1.033E-06	1.918E-08	3.123E-09
U-233	Am-241	1.000E+00	0.000E+00	2.486E-12	2.017E-11	1.578E-10	5.778E-10	6.400E-10	5.812E-10	1.284E-10	2.384E-12	3.881E-13
U-233	Pu-241	1.000E+00	0.000E+00	9.060E-16	2.207E-14	5.751E-13	6.052E-12	1.512E-11	1.430E-11	3.426E-12	6.363E-14	1.036E-14
U-233	Pu-241	2.450E-05	0.000E+00	4.229E-17	3.562E-16	3.145E-15	1.503E-14	2.413E-14	2.243E-14	5.190E-15	9.639E-17	1.570E-17
U-233	ΣS(j):		0.000E+00	2.487E-12	2.019E-11	1.584E-10	5.839E-10	6.552E-10	5.956E-10	1.318E-10	2.447E-12	3.985E-13
Th-229	Am-241	1.000E+00	0.000E+00	7.930E-17	1.981E-15	5.648E-14	7.841E-13	5.433E-12	6.230E-12	1.133E-11	1.201E-11	1.170E-11
Th-229	Pu-241	1.000E+00	0.000E+00	2.161E-20	1.613E-18	1.505E-16	5.807E-15	9.183E-14	1.111E-13	2.456E-13	2.672E-13	2.603E-13
Th-229	Pu-241	2.450E-05	0.000E+00	1.342E-21	3.449E-20	1.076E-18	1.825E-17	1.724E-16	2.028E-16	4.076E-16	4.382E-16	4.268E-16
Th-229	ΣS(j):		0.000E+00	7.932E-17	1.982E-15	5.663E-14	7.899E-13	5.525E-12	6.341E-12	1.158E-11	1.228E-11	1.196E-11
Pu-238	Pu-238	1.840E-09	1.362E-10	1.349E-10	1.325E-10	1.245E-10	1.040E-10	5.554E-11	4.899E-11	9.241E-12	1.237E-13	1.736E-14
Pu-238	Pu-238	1.000E+00	7.400E-02	7.334E-02	7.204E-02	6.765E-02	5.655E-02	3.018E-02	2.662E-02	5.022E-03	6.725E-05	9.436E-06
Pu-238	ΣS(j):		7.400E-02	7.334E-02	7.204E-02	6.765E-02	5.655E-02	3.018E-02	2.662E-02	5.022E-03	6.725E-05	9.436E-06
U-234	Pu-238	1.000E+00	0.000E+00	2.045E-07	5.828E-07	1.629E-06	3.030E-06	2.459E-06	2.198E-06	4.239E-07	5.676E-09	7.965E-10
Th-230	Pu-238	1.000E+00	0.000E+00	9.282E-13	8.074E-12	7.984E-11	5.260E-10	2.405E-09	2.697E-09	4.485E-09	4.803E-09	4.761E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	1.336E-16	3.462E-15	1.113E-13	2.036E-12	2.286E-11	2.747E-11	6.062E-11	6.750E-11	6.694E-11
Pb-210	Pu-238	1.000E+00	0.000E+00	1.031E-18	7.918E-17	8.118E-15	3.936E-13	9.892E-12	1.260E-11	3.497E-11	4.006E-11	3.974E-11
Pu-239	Pu-239	1.000E+00	3.140E+00	3.137E+00	3.130E+00	3.106E+00	3.038E+00	2.814E+00	2.771E+00	2.260E+00	1.334E+00	1.049E+00
U-235	Pu-239	1.000E+00	0.000E+00	3.026E-09	8.695E-09	2.504E-08	5.137E-08	6.580E-08	6.525E-08	5.369E-08	3.169E-08	2.493E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	3.179E-14	2.702E-13	2.466E-12	1.301E-11	3.133E-11	3.188E-11	2.739E-11	1.617E-11	1.272E-11
Ac-227	Pu-239	1.000E+00	0.000E+00	3.284E-16	7.942E-15	2.032E-13	2.133E-12	7.099E-12	7.302E-12	6.384E-12	3.769E-12	2.964E-12
Pu-241	Pu-241	1.000E+00	2.520E+00	2.399E+00	2.174E+00	1.541E+00	5.759E-01	1.839E-02	9.234E-03	8.792E-07	5.160E-17	1.079E-21

Pu-241	Pu-241	2.450E-05	6.174E-05	5.878E-05	5.327E-05	3.775E-05	1.411E-05	4.505E-07	2.262E-07	2.399E-11	1.264E-21	2.644E-26
Pu-241	ΣS(j):		2.520E+00	2.399E+00	2.174E+00	1.541E+00	5.759E-01	1.839E-02	9.234E-03	9.792E-07	5.161E-17	1.079E-21

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 98.46 seconds
Total water/soil iteration failures = 8.900E+01.

Attachment 7. Sr-90 All-Pathways for Ground Water (Summary File)

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:59 Page 1
Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.rad

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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
Dose/Source Ratios Summed Over All Pathways 17
Single Radionuclide Soil Guidelines 17
Dose Per Nuclide Summed Over All Pathways 18
Soil Concentration Per Nuclide 18

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Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.rad

Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(1)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(1)
D-34	Food transfer factors:			
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(1,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(1,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(1,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			

D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(1,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)

*Base Case means Default.Lib w/o Associate Nuclide contributions.
RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:59 Page 3
Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	2.000E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	1.000E+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): Sr-90	1.000E+02	0.000E+00	---	S1(1)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(1)
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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.000E+00	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)	1.000E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.000E-01	4.000E-01	---	TPSZ

R014	Saturated zone effective porosity	2.000E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	1.000E+02	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R015	Unsat. zone 1, thickness (m)	4.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	5.300E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.516E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	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	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)

R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA(1)
R017	Ring 2	not used	2.732E-01	---	FRACA(2)
R017	Ring 3	not used	0.000E+00	---	FRACA(3)
R017	Ring 4	not used	0.000E+00	---	FRACA(4)
R017	Ring 5	not used	0.000E+00	---	FRACA(5)
R017	Ring 6	not used	0.000E+00	---	FRACA(6)
R017	Ring 7	not used	0.000E+00	---	FRACA(7)
R017	Ring 8	not used	0.000E+00	---	FRACA(8)
R017	Ring 9	not used	0.000E+00	---	FRACA(9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.300E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	5.400E+00	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	3.650E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	5.000E-01	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM

R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	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)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

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

Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.rad

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	10000.00 square meters	Sr-90	1.000E+02
Thickness:	2.00 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):	9.939E+02	9.652E+02	9.102E+02	7.413E+02	4.124E+02	5.297E+01	2.003E-01	9.969E-10
M(t):	3.975E+01	3.861E+01	3.641E+01	2.965E+01	1.650E+01	2.119E+00	8.013E-03	3.987E-11

Maximum TDOSE(t): 9.939E+02 mrem/yr at t = 0.000E+00 years
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Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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-	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.
Sr-90	1.367E+00	0.0014	8.252E-03	0.0000	0.000E+00	0.0000	7.862E+02	0.7910	1.588E+02	0.1597	4.713E+01	0.0474	4.122E-01	0.0004
Total	1.367E+00	0.0014	8.252E-03	0.0000	0.000E+00	0.0000	7.862E+02	0.7910	1.588E+02	0.1597	4.713E+01	0.0474	4.122E-01	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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.939E+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	9.939E+02	1.0000

*Sum of all water independent and dependent pathways.
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Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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-Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Sr-90	1.328E+00	0.0014	8.013E-03	0.0000	0.000E+00	0.0000	7.635E+02	0.7910	1.542E+02	0.1597	4.577E+01	0.0474	4.003E-01	0.0004
Total	1.328E+00	0.0014	8.013E-03	0.0000	0.000E+00	0.0000	7.635E+02	0.7910	1.542E+02	0.1597	4.577E+01	0.0474	4.003E-01	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.
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.652E+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	9.652E+02	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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.
Sr-90	1.252E+00	0.0014	7.557E-03	0.0000	0.000E+00	0.0000	7.200E+02	0.7910	1.454E+02	0.1597	4.317E+01	0.0474	3.775E-01	0.0004
Total	1.252E+00	0.0014	7.557E-03	0.0000	0.000E+00	0.0000	7.200E+02	0.7910	1.454E+02	0.1597	4.317E+01	0.0474	3.775E-01	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.
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.102E+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	9.102E+02	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:59 Page 12
Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Sr-90	1.020E+00	0.0014	6.155E-03	0.0000	0.000E+00	0.0000	5.864E+02	0.7910	1.184E+02	0.1597	3.516E+01	0.0474	3.075E-01	0.0004
Total	1.020E+00	0.0014	6.155E-03	0.0000	0.000E+00	0.0000	5.864E+02	0.7910	1.184E+02	0.1597	3.516E+01	0.0474	3.075E-01	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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.413E+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	7.413E+02	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:59 Page 13
Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Sr-90	5.673E-01	0.0014	3.424E-03	0.0000	0.000E+00	0.0000	3.262E+02	0.7910	6.588E+01	0.1597	1.956E+01	0.0474	1.711E-01	0.0004
Total	5.673E-01	0.0014	3.424E-03	0.0000	0.000E+00	0.0000	3.262E+02	0.7910	6.588E+01	0.1597	1.956E+01	0.0474	1.711E-01	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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.124E+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	4.124E+02	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:59 Page 14
Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Sr-90	7.286E-02	0.0014	4.398E-04	0.0000	0.000E+00	0.0000	4.190E+01	0.7910	8.462E+00	0.1597	2.512E+00	0.0474	2.197E-02	0.0004
Total	7.286E-02	0.0014	4.398E-04	0.0000	0.000E+00	0.0000	4.190E+01	0.7910	8.462E+00	0.1597	2.512E+00	0.0474	2.197E-02	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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.297E+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	5.297E+01	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Sr-90	2.069E-04	0.0010	1.249E-06	0.0000	0.000E+00	0.0000	1.190E-01	0.5940	2.403E-02	0.1200	7.135E-03	0.0356	6.240E-05	0.0003
Total	2.069E-04	0.0010	1.249E-06	0.0000	0.000E+00	0.0000	1.190E-01	0.5940	2.403E-02	0.1200	7.135E-03	0.0356	6.240E-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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Sr-90	3.474E-02	0.1734	1.410E-04	0.0007	0.000E+00	0.0000	5.758E-03	0.0287	5.983E-03	0.0299	3.266E-03	0.0163	2.003E-01	1.0000
Total	3.474E-02	0.1734	1.410E-04	0.0007	0.000E+00	0.0000	5.758E-03	0.0287	5.983E-03	0.0299	3.266E-03	0.0163	2.003E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:59 Page 16
Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Sr-90	2.527E-13	0.0003	1.525E-15	0.0000	0.000E+00	0.0000	1.453E-10	0.1458	2.935E-11	0.0294	8.712E-12	0.0087	7.619E-14	0.0001
Total	2.527E-13	0.0003	1.525E-15	0.0000	0.000E+00	0.0000	1.453E-10	0.1458	2.935E-11	0.0294	8.712E-12	0.0087	7.619E-14	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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Sr-90	5.661E-10	0.5679	2.298E-12	0.0023	0.000E+00	0.0000	9.386E-11	0.0942	9.767E-11	0.0980	5.325E-11	0.0534	9.969E-10	1.0000
Total	5.661E-10	0.5679	2.298E-12	0.0023	0.000E+00	0.0000	9.386E-11	0.0942	9.767E-11	0.0980	5.325E-11	0.0534	9.969E-10	1.0000

*Sum of all water independent and dependent pathways.

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Summary : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.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
Sr-90+D	Sr-90+D	1.000E+00	9.939E+00	9.652E+00	9.102E+00	7.413E+00	4.124E+00	5.297E-01	2.003E-03	9.969E-12

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Sr-90	2.515E+00	2.590E+00	2.747E+00	3.372E+00	6.062E+00	4.720E+01	1.248E+04	2.508E+12

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)
Sr-90	1.000E+02	0.000E+00	9.939E+00	2.515E+00	9.939E+00	2.515E+00

Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated
DOSE(j,t), mrem/yr

Nuclide (j)	Parent (i)	THF(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
Sr-90	Sr-90	1.000E+00	9.939E+02	9.652E+02	9.102E+02	7.413E+02	4.124E+02	5.297E+01	2.003E-01	9.969E-10

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated
S(j,t), pCi/g

Nuclide (j)	Parent (i)	THF(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
Sr-90	Sr-90	1.000E+00	1.000E+02	9.711E+01	9.158E+01	7.459E+01	4.150E+01	5.329E+00	1.514E-02	1.848E-11

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 0.93 seconds

Attachment 8. Sr-90 All-Pathways for Ground Water (Concentration File)

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:59 Page 1
Concent : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.rad

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Part IV: Concentration of Radionuclides

Concentration of radionuclides in different media
Time= 0.000E+00 2
Time= 1.000E+00 3
Time= 3.000E+00 4
Time= 1.000E+01 5
Time= 3.000E+01 6
Time= 1.000E+02 7
Time= 3.000E+02 8
Time= 1.000E+03 9

Concentration of radionuclides in environmental media
at t = 0.000E+00 years

Radio-Nuclide	Contaminated Zone pCi/g	Surface Soil* pCi/g	Air Particulate pCi/m**3	Well Water pCi/L	Surface Water pCi/L
Sr-90	1.000E+02	1.000E+02	1.693E-03	0.000E+00	0.000E+00

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 0.000E+00 years*

Radio-Nuclide	Drinking Water pCi/L	Nonleafy Vegetable pCi/kg	Leafy Vegetable pCi/kg	Fodder Meat pCi/kg	Fodder Milk pCi/kg	Meat pCi/kg	Milk pCi/L	Fish pCi/kg	Crustacea pCi/kg
Sr-90	0.000E+00	3.000E+04	3.000E+04	3.000E+04	3.000E+04	1.672E+04	3.400E+03	0.000E+00	0.000E+00

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in environmental media
at t = 1.000E+00 years

Radio-Nuclide	Contaminated Zone pCi/g	Surface Soil* pCi/g	Air Particulate pCi/m**3	Well Water pCi/L	Surface Water pCi/L
Sr-90	9.711E+01	9.711E+01	1.644E-03	0.000E+00	0.000E+00

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 1.000E+00 years*

Radio-Nuclide	Drinking Water pCi/L	Nonleafy Vegetable pCi/kg	Leafy Vegetable pCi/kg	Fodder Meat pCi/kg	Fodder Milk pCi/kg	Meat pCi/kg	Milk pCi/L	Fish pCi/kg	Crustacea pCi/kg
Sr-90	0.000E+00	2.914E+04	2.913E+04	2.920E+04	2.916E+04	1.625E+04	3.304E+03	0.000E+00	0.000E+00

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in environmental media
at t = 3.000E+00 years

Radio-	Contaminated Zone	Surface Soil*	Air Particulate	Well Water	Surface Water

Nuclide	pCi/g	pCi/g	pCi/m**3	pCi/L	pCi/L
Sr-90	9.158E+01	9.158E+01	1.550E-03	0.000E+00	0.000E+00

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 3.000E+00 years*

Radio-Nuclide	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea
	pCi/L	pCi/kg	pCi/kg	pCi/kg	pCi/kg	pCi/kg	pCi/L	pCi/kg	pCi/kg
Sr-90	0.000E+00	2.748E+04	2.747E+04	2.754E+04	2.750E+04	1.533E+04	3.116E+03	0.000E+00	0.000E+00

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in environmental media
at t = 1.000E+01 years

Radio-Nuclide	Contaminated Zone	Surface Soil*	Air Particulate	Well Water	Surface Water
	pCi/g	pCi/g	pCi/m**3	pCi/L	pCi/L
Sr-90	7.459E+01	7.459E+01	1.263E-03	0.000E+00	0.000E+00

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 1.000E+01 years*

Radio-	Drinking Water	Nonleafy Vegetable	Leafy Vegetable	Fodder Meat	Fodder Milk	Meat	Milk	Fish	Crustacea

Nuclide	pCi/L	pCi/kg	pCi/kg	pCi/kg	pCi/kg	pCi/kg	pCi/L	pCi/kg	pCi/kg
Sr-90	0.000E+00	2.238E+04	2.238E+04	2.243E+04	2.239E+04	1.248E+04	2.538E+03	0.000E+00	0.000E+00

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in environmental media
at t = 3.000E+01 years

Radio-Nuclide	Contaminated Zone pCi/g	Surface Soil* pCi/g	Air Particulate pCi/m**3	Well Water pCi/L	Surface Water pCi/L
Sr-90	4.150E+01	4.150E+01	7.025E-04	0.000E+00	0.000E+00

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 3.000E+01 years*

Radio-Nuclide	Drinking Water pCi/L	Nonleafy Vegetable pCi/kg	Leafy Vegetable pCi/kg	Fodder Meat pCi/kg	Fodder Milk pCi/kg	Meat pCi/kg	Milk pCi/L	Fish pCi/kg	Crustacea pCi/kg
Sr-90	0.000E+00	1.245E+04	1.245E+04	1.248E+04	1.246E+04	6.945E+03	1.412E+03	0.000E+00	0.000E+00

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in environmental media
at t = 1.000E+02 years

Radio-Nuclide	Contaminated Zone pCi/g	Surface Soil* pCi/g	Air Particulate pCi/m**3	Well Water pCi/L	Surface Water pCi/L
Sr-90	5.329E+00	5.329E+00	9.023E-05	0.000E+00	0.000E+00

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 1.000E+02 years*

Radio-Nuclide	Drinking Water pCi/L	Nonleafy Vegetable pCi/kg	Leafy Vegetable pCi/kg	Fodder Meat pCi/kg	Fodder Milk pCi/kg	Meat pCi/kg	Milk pCi/L	Fish pCi/kg	Crustacea pCi/kg
Sr-90	0.000E+00	1.599E+03	1.599E+03	1.602E+03	1.600E+03	8.919E+02	1.813E+02	0.000E+00	0.000E+00

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in environmental media
at t = 3.000E+02 years

Radio-Nuclide	Contaminated Zone pCi/g	Surface Soil* pCi/g	Air Particulate pCi/m**3	Well Water pCi/L	Surface Water pCi/L
Sr-90	1.514E-02	1.514E-02	2.563E-07	4.497E-01	4.497E-03

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 3.000E+02 years*

Radio-Nuclide	Drinking Water pCi/L	Nonleafy Vegetable pCi/kg	Leafy Vegetable pCi/kg	Fodder Meat pCi/kg	Fodder Milk pCi/kg	Meat pCi/kg	Milk pCi/L	Fish pCi/kg	Crustacea pCi/kg
Sr-90	4.497E-01	4.712E+00	5.308E+00	5.374E+00	5.367E+00	3.160E+00	7.493E-01	2.698E-01	4.496E-01

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

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Concent : Resident Farmer Scenario Sr-90 Water All-Pathways
File : Sr-90_all-pathways_water.rad

Concentration of radionuclides in environmental media
at t = 1.000E+03 years

Radio-Nuclide	Contaminated Zone pCi/g	Surface Soil* pCi/g	Air Particulate pCi/m**3	Well Water pCi/L	Surface Water pCi/L
Sr-90	1.848E-11	1.848E-11	3.129E-16	7.373E-09	7.373E-11

*The Surface Soil is the top layer of soil within the user specified mixing zone/depth.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Concentration of radionuclides in foodstuff media
at t = 1.000E+03 years*

Radio-Nuclide	Drinking Water pCi/L	Nonleafy Vegetable pCi/kg	Leafy Vegetable pCi/kg	Fodder Meat pCi/kg	Fodder Milk pCi/kg	Meat pCi/kg	Milk pCi/L	Fish pCi/kg	Crustacea pCi/kg
Sr-90	7.373E-09	8.342E-09	1.812E-08	1.908E-08	1.905E-08	1.339E-08	4.473E-09	4.424E-09	7.373E-09

*Concentrations are at consumption time and include radioactive decay and ingrowth during storage time.
For livestock fodder, consumption time is t minus meat or milk storage time.

Concentrations in the media occurring in pathways that are suppressed are calculated using the current input parameters, i.e. using parameters appearing in the input screen when the pathways are active.

Attachment 9. Combined Upper Area and Filter Bed Area with No Aquatic Food (Summary File)

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Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.rad

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Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.rad

Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Co-60	2.190E-04	2.190E-04	DCF2(3)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(4)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(5)
B-1	Eu-154	2.860E-04	2.860E-04	DCF2(7)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(8)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(9)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(10)

B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(11)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2(12)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2(14)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(15)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(16)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(17)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(18)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(19)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(20)
B-1	U-233	1.350E-01	1.350E-01	DCF2(21)
B-1	U-234	1.320E-01	1.320E-01	DCF2(22)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(23)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Co-60	2.690E-05	2.690E-05	DCF3(3)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(4)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(5)
D-1	Eu-154	9.550E-06	9.550E-06	DCF3(7)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(8)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(9)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(10)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(11)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(12)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(14)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(15)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(16)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(17)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(18)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(19)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(20)
D-1	U-233	2.890E-04	2.890E-04	DCF3(21)
D-1	U-234	2.830E-04	2.830E-04	DCF3(22)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(23)
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)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)

D-34	Am-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34					
D-34	Co-60	, plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF(3,1)
D-34	Co-60	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF(3,2)
D-34	Co-60	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(3,3)
D-34					
D-34	Cs-137+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Cs-137+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(4,2)
D-34	Cs-137+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(4,3)
D-34					
D-34	Eu-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	Eu-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(5,2)
D-34	Eu-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(5,3)
D-34					
D-34	Eu-154	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	Eu-154	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(7,2)
D-34	Eu-154	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(7,3)
D-34					
D-34	Gd-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	Gd-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(8,2)
D-34	Gd-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(8,3)
D-34					
D-34	Np-237+D	, plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(9,1)
D-34	Np-237+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Np-237+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(9,3)
D-34					
D-34	Pa-231	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(10,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(10,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(10,3)
D-34					
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(11,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(11,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(11,3)
D-34					
D-34	Pu-238	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Pu-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Pu-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(12,3)
D-34					
D-34	Pu-239	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(14,1)
D-34	Pu-239	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Pu-239	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(14,3)
D-34					
D-34	Pu-241	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Pu-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Pu-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(15,3)
D-34					

File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(16,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(18,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(18,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(18,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(19,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(19,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(19,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(3,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(4,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(5,2)

D-5				
D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC(7,1)
D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(7,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5				
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(8,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(8,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(9,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(10,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(11,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(11,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(12,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(14,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(14,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(15,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(15,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(16,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(16,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(18,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(18,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(19,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(19,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(21,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)
D-5				

D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(22,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(22,2)
D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(23,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(23,2)

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

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.310E+05	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	6.100E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	3.620E+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)	1.140E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	3.000E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	7.810E+02	0.000E+00	---	T(9)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.700E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Co-60	6.690E-03	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Cs-137	2.550E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Eu-152	1.500E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Eu-154	1.400E-02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-238	3.190E-03	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.020E-01	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Pu-241	9.110E-01	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Sr-90	5.540E-02	0.000E+00	---	S1(18)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(18)
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)	1.500E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Watershed area for nearby stream or pond (m**2)	5.440E+06	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS
R014	Density of saturated zone (g/cm**3)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.000E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	1.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.600E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	5.300E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	2.440E+01	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.644E-02	ALEACH(2)

R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)
R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.332E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.159E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)

R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(15)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(18)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU(18,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS(18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.768E-03	ALEACH(18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(18)
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	2.644E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

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 Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.070E-04	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.003E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(11)

R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.324E-04	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.631E-04	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)

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Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.rad

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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(23)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(23,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(23)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(23)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	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	7.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	5.000E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	2.500E-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)
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R018	Fruits, vegetables and grain consumption (kg/yr)	1.600E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	1.400E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	9.200E+01	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.300E+01	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)	5.100E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	1.000E+00	-1	---	FPLANT
R018	Contamination fraction of meat	1.000E+00	-1	---	FMEAT
R018	Contamination fraction of milk	1.000E+00	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	6.800E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	5.500E+01	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	5.000E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.600E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	5.000E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-04	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	9.000E-01	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	1.000E+00	1.000E+00	---	FGWDW
R019	Household water fraction from ground water	not used	1.000E+00	---	FGWHH
R019	Livestock water fraction from ground water	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	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)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	8.000E-02	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary of Pathway Selections

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

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:25 Page 14
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.rad

Contaminated Zone Dimensions

Area: 131000.00 square meters
Thickness: 6.10 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Am-241	1.700E-01
Co-60	6.690E-03
Cs-137	2.550E+00
Eu-152	1.500E-01
Eu-154	1.400E-02
Pu-238	3.190E-03
Pu-239	1.020E-01
Pu-241	9.110E-01
Sr-90	5.540E-02

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
TDOSE(t):	8.466E+00	8.250E+00	7.838E+00	6.579E+00	4.087E+00	9.204E-01	7.090E-01	1.295E-01	5.037E+00	2.547E+00
M(t):	3.387E-01	3.300E-01	3.135E-01	2.632E-01	1.635E-01	3.682E-02	2.836E-02	5.180E-03	2.015E-01	1.019E-01

Maximum TDOSE(t): 8.466E+00 mrem/yr at t = 0.000E+00 years
RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:25 Page 15
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.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-	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.
Am-241	4.445E-03	0.0005	6.247E-03	0.0007	0.000E+00	0.0000	1.076E-01	0.0127	1.106E-03	0.0001	4.310E-05	0.0000	1.690E-02	0.0020

Co-60	5.979E-02	0.0071	1.139E-07	0.0000	0.000E+00	0.0000	2.347E-03	0.0003	1.262E-03	0.0001	1.520E-04	0.0000	4.616E-06	0.0000
Cs-137	5.058E+00	0.5975	6.669E-06	0.0000	0.000E+00	0.0000	8.773E-01	0.1036	7.671E-01	0.0906	2.505E-01	0.0296	3.450E-03	0.0004
Eu-152	6.031E-01	0.0712	2.679E-06	0.0000	0.000E+00	0.0000	4.123E-04	0.0000	8.001E-05	0.0000	2.779E-06	0.0000	2.593E-05	0.0000
Eu-154	6.083E-02	0.0072	3.193E-07	0.0000	0.000E+00	0.0000	5.596E-05	0.0000	1.086E-05	0.0000	3.772E-07	0.0000	3.519E-06	0.0000
Pu-238	2.884E-07	0.0000	1.033E-04	0.0000	0.000E+00	0.0000	1.772E-03	0.0002	3.641E-05	0.0000	5.195E-07	0.0000	2.783E-04	0.0000
Pu-239	1.789E-05	0.0000	3.629E-03	0.0004	0.000E+00	0.0000	6.292E-02	0.0074	1.293E-03	0.0002	1.845E-05	0.0000	9.884E-03	0.0012
Pu-241	2.882E-05	0.0000	6.350E-04	0.0001	0.000E+00	0.0000	1.106E-02	0.0013	2.230E-04	0.0000	3.375E-06	0.0000	1.737E-03	0.0002
Sr-90	7.930E-04	0.0001	5.936E-06	0.0000	0.000E+00	0.0000	4.363E-01	0.0515	8.806E-02	0.0104	2.615E-02	0.0031	2.288E-04	0.0000
Total	5.787E+00	0.6836	1.063E-02	0.0013	0.000E+00	0.0000	1.500E+00	0.1771	8.592E-01	0.1015	2.769E-01	0.0327	3.252E-02	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 = 0.000E+00 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.364E-01	0.0161
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.355E-02	0.0075
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.957E+00	0.8217
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.037E-01	0.0713
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.090E-02	0.0072
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.191E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.777E-02	0.0092
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.368E-02	0.0016
Sr-90	0.000E+00	0.0000	0.000E+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	0.0651
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.466E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:25 Page 16
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.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-	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.
Am-241	4.426E-03	0.0005	6.221E-03	0.0008	0.000E+00	0.0000	1.072E-01	0.0130	1.101E-03	0.0001	6.283E-05	0.0000	1.683E-02	0.0020
Co-60	5.242E-02	0.0064	9.983E-08	0.0000	0.000E+00	0.0000	2.058E-03	0.0002	1.107E-03	0.0001	1.333E-04	0.0000	4.047E-06	0.0000
Cs-137	4.943E+00	0.5991	6.517E-06	0.0000	0.000E+00	0.0000	8.572E-01	0.1039	7.496E-01	0.0909	2.448E-01	0.0297	3.371E-03	0.0004
Eu-152	5.725E-01	0.0694	2.543E-06	0.0000	0.000E+00	0.0000	3.913E-04	0.0000	7.595E-05	0.0000	2.638E-06	0.0000	2.461E-05	0.0000
Eu-154	5.622E-02	0.0068	2.951E-07	0.0000	0.000E+00	0.0000	5.172E-05	0.0000	1.004E-05	0.0000	3.486E-07	0.0000	3.253E-06	0.0000
Pu-238	2.861E-07	0.0000	1.025E-04	0.0000	0.000E+00	0.0000	1.758E-03	0.0002	3.612E-05	0.0000	5.155E-07	0.0000	2.761E-04	0.0000
Pu-239	1.789E-05	0.0000	3.629E-03	0.0004	0.000E+00	0.0000	6.292E-02	0.0076	1.293E-03	0.0002	1.845E-05	0.0000	9.884E-03	0.0012
Pu-241	6.468E-05	0.0000	6.575E-04	0.0001	0.000E+00	0.0000	1.144E-02	0.0014	2.218E-04	0.0000	3.744E-06	0.0000	1.797E-03	0.0002
Sr-90	7.729E-04	0.0001	5.786E-06	0.0000	0.000E+00	0.0000	4.253E-01	0.0515	8.584E-02	0.0104	2.549E-02	0.0031	2.230E-04	0.0000

Total	5.629E+00	0.6823	1.062E-02	0.0013	0.000E+00	0.0000	1.468E+00	0.1780	9.393E-01	0.1017	3.705E-01	0.0328	3.242E-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+00 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.358E-01	0.0165
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.572E-02	0.0068
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.798E+00	0.8239
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.730E-01	0.0695
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.628E-02	0.0068
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.174E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.776E-02	0.0094
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.418E-02	0.0017
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.376E-01	0.0652
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.250E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:25 Page 17
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.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-	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.
Am-241	4.389E-03	0.0006	6.168E-03	0.0008	0.000E+00	0.0000	1.063E-01	0.0136	1.092E-03	0.0001	6.230E-05	0.0000	1.669E-02	0.0021
Co-60	4.029E-02	0.0051	7.673E-08	0.0000	0.000E+00	0.0000	1.582E-03	0.0002	8.506E-04	0.0001	1.025E-04	0.0000	3.111E-06	0.0000
Cs-137	4.719E+00	0.6021	6.223E-06	0.0000	0.000E+00	0.0000	8.185E-01	0.1044	7.157E-01	0.0913	2.337E-01	0.0298	3.219E-03	0.0004
Eu-152	5.159E-01	0.0658	2.292E-06	0.0000	0.000E+00	0.0000	3.526E-04	0.0000	6.844E-05	0.0000	2.377E-06	0.0000	2.218E-05	0.0000
Eu-154	4.802E-02	0.0061	2.521E-07	0.0000	0.000E+00	0.0000	4.418E-05	0.0000	8.573E-06	0.0000	2.978E-07	0.0000	2.778E-06	0.0000
Pu-238	2.816E-07	0.0000	1.009E-04	0.0000	0.000E+00	0.0000	1.730E-03	0.0002	3.556E-05	0.0000	5.076E-07	0.0000	2.718E-04	0.0000
Pu-239	1.789E-05	0.0000	3.629E-03	0.0005	0.000E+00	0.0000	6.291E-02	0.0080	1.293E-03	0.0002	1.844E-05	0.0000	9.883E-03	0.0013
Pu-241	1.310E-04	0.0000	6.986E-04	0.0001	0.000E+00	0.0000	1.214E-02	0.0015	2.194E-04	0.0000	4.425E-06	0.0000	1.906E-03	0.0002
Sr-90	7.344E-04	0.0001	5.498E-06	0.0000	0.000E+00	0.0000	4.041E-01	0.0516	8.156E-02	0.0104	2.422E-02	0.0031	2.119E-04	0.0000
Total	5.329E+00	0.6799	1.061E-02	0.0014	0.000E+00	0.0000	1.408E+00	0.1796	8.009E-01	0.1022	2.581E-01	0.0329	3.221E-02	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 = 3.000E+00 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.

Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.347E-01	0.0172
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.283E-02	0.0055
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.491E+00	0.8281
Eu-152	0.000E+00	0.0000	0.000E+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-01	0.0659
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.807E-02	0.0061
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.139E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.775E-02	0.0099
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.510E-02	0.0019
Sr-90	0.000E+00	0.0000	0.000E+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-01	0.0652
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.838E+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-	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.
Am-241	4.260E-03	0.0006	5.987E-03	0.0009	0.000E+00	0.0000	1.032E-01	0.0157	1.060E-03	0.0002	6.048E-05	0.0000	1.620E-02	0.0025
Co-60	1.604E-02	0.0024	3.055E-08	0.0000	0.000E+00	0.0000	6.298E-04	0.0001	3.387E-04	0.0001	4.080E-05	0.0000	1.239E-06	0.0000
Cs-137	4.014E+00	0.6101	5.293E-06	0.0000	0.000E+00	0.0000	6.962E-01	0.1058	6.088E-01	0.0925	1.988E-01	0.0302	2.738E-03	0.0004
Eu-152	3.583E-01	0.0545	1.592E-06	0.0000	0.000E+00	0.0000	2.449E-04	0.0000	4.754E-05	0.0000	1.651E-06	0.0000	1.540E-05	0.0000
Eu-154	2.765E-02	0.0042	1.452E-07	0.0000	0.000E+00	0.0000	2.544E-05	0.0000	4.937E-06	0.0000	1.715E-07	0.0000	1.600E-06	0.0000
Pu-238	2.664E-07	0.0000	9.543E-05	0.0000	0.000E+00	0.0000	1.637E-03	0.0002	3.364E-05	0.0000	4.808E-07	0.0000	2.571E-04	0.0000
Pu-239	1.789E-05	0.0000	3.627E-03	0.0006	0.000E+00	0.0000	6.289E-02	0.0096	1.292E-03	0.0002	1.844E-05	0.0000	9.879E-03	0.0015
Pu-241	3.141E-04	0.0000	8.088E-04	0.0001	0.000E+00	0.0000	1.401E-02	0.0021	2.115E-04	0.0000	6.291E-06	0.0000	2.200E-03	0.0003
Sr-90	6.140E-04	0.0001	4.597E-06	0.0000	0.000E+00	0.0000	3.379E-01	0.0514	6.820E-02	0.0104	2.025E-02	0.0031	1.772E-04	0.0000
Total	4.422E+00	0.6720	1.053E-02	0.0016	0.000E+00	0.0000	1.217E+00	0.1849	6.800E-01	0.1034	2.192E-01	0.0333	3.147E-02	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+01 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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.307E-01	0.0199
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.705E-02	0.0026
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.521E+00	0.8391
Eu-152	0.000E+00	0.0000	0.000E+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-01	0.0545
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-02	0.0042
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.024E-03	0.0003
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.772E-02	0.0118
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.755E-02	0.0027
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.271E-01	0.0649

Total	0.000E+00	0.0000	0.000E+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-	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.
Am-241	3.914E-03	0.0010	5.500E-03	0.0013	0.000E+00	0.0000	9.477E-02	0.0232	9.743E-04	0.0002	5.555E-05	0.0000	1.488E-02	0.0036
Co-60	1.155E-03	0.0003	2.200E-09	0.0000	0.000E+00	0.0000	4.535E-05	0.0000	2.438E-05	0.0000	2.937E-06	0.0000	8.918E-08	0.0000
Cs-137	2.528E+00	0.6187	3.334E-06	0.0000	0.000E+00	0.0000	4.385E-01	0.1073	3.834E-01	0.0938	1.252E-01	0.0306	1.725E-03	0.0004
Eu-152	1.265E-01	0.0310	5.619E-07	0.0000	0.000E+00	0.0000	8.647E-05	0.0000	1.678E-05	0.0000	5.828E-07	0.0000	5.438E-06	0.0000
Eu-154	5.715E-03	0.0014	3.000E-08	0.0000	0.000E+00	0.0000	5.258E-06	0.0000	1.020E-06	0.0000	3.544E-08	0.0000	3.307E-07	0.0000
Pu-238	2.274E-07	0.0000	8.145E-05	0.0000	0.000E+00	0.0000	1.397E-03	0.0003	2.871E-05	0.0000	4.119E-07	0.0000	2.194E-04	0.0001
Pu-239	1.787E-05	0.0000	3.623E-03	0.0009	0.000E+00	0.0000	6.282E-02	0.0154	1.291E-03	0.0003	1.842E-05	0.0000	9.868E-03	0.0024
Pu-241	5.676E-04	0.0001	9.378E-04	0.0002	0.000E+00	0.0000	1.618E-02	0.0040	1.922E-04	0.0000	8.756E-06	0.0000	2.542E-03	0.0006
Sr-90	3.682E-04	0.0001	2.756E-06	0.0000	0.000E+00	0.0000	2.026E-01	0.0496	4.089E-02	0.0100	1.214E-02	0.0030	1.062E-04	0.0000
Total	2.667E+00	0.6525	1.015E-02	0.0025	0.000E+00	0.0000	8.164E-01	0.1998	4.269E-01	0.1045	1.374E-01	0.0336	2.935E-02	0.0072

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.201E-01	0.0294
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.228E-03	0.0003
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.477E+00	0.8508
Eu-152	0.000E+00	0.0000	0.000E+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-01	0.0310
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.722E-03	0.0014
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.727E-03	0.0004
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.764E-02	0.0190
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.043E-02	0.0050
Sr-90	0.000E+00	0.0000	0.000E+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-01	0.0627
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.087E+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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	2.909E-03	0.0032	4.085E-03	0.0044	0.000E+00	0.0000	7.044E-02	0.0765	7.254E-04	0.0008	4.128E-05	0.0000	1.105E-02	0.0120
Co-60	1.157E-07	0.0000	2.203E-13	0.0000	0.000E+00	0.0000	4.541E-09	0.0000	2.442E-09	0.0000	1.942E-10	0.0000	8.931E-12	0.0000
Cs-137	5.013E-01	0.5446	6.609E-07	0.0000	0.000E+00	0.0000	8.693E-02	0.0944	7.602E-02	0.0826	2.482E-02	0.0270	3.419E-04	0.0004
Eu-152	3.306E-03	0.0036	1.469E-08	0.0000	0.000E+00	0.0000	2.260E-06	0.0000	4.386E-07	0.0000	1.523E-08	0.0000	1.421E-07	0.0000
Eu-154	2.294E-05	0.0000	1.204E-10	0.0000	0.000E+00	0.0000	2.110E-08	0.0000	4.095E-09	0.0000	1.422E-10	0.0000	1.327E-09	0.0000
Pu-238	1.307E-07	0.0000	4.677E-05	0.0001	0.000E+00	0.0000	8.021E-04	0.0009	1.648E-05	0.0000	2.410E-07	0.0000	1.260E-04	0.0001
Pu-239	1.780E-05	0.0000	3.609E-03	0.0039	0.000E+00	0.0000	6.258E-02	0.0680	1.286E-03	0.0014	1.835E-05	0.0000	9.830E-03	0.0107
Pu-241	5.624E-04	0.0006	7.947E-04	0.0009	0.000E+00	0.0000	1.370E-02	0.0149	1.419E-04	0.0002	8.004E-06	0.0000	2.151E-03	0.0023
Sr-90	6.148E-05	0.0001	4.602E-07	0.0000	0.000E+00	0.0000	3.383E-02	0.0368	6.828E-03	0.0074	2.027E-03	0.0022	1.774E-05	0.0000
Total	5.082E-01	0.5521	8.537E-03	0.0093	0.000E+00	0.0000	2.683E-01	0.2915	8.502E-02	0.0924	2.692E-02	0.0292	2.352E-02	0.0256

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.926E-02	0.0970
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.230E-07	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.894E-01	0.7490
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.309E-03	0.0036
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.296E-05	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.917E-04	0.0011
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.734E-02	0.0840
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-02	0.0189
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.276E-02	0.0465
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.204E-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 = 1.140E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	2.742E-03	0.0039	3.849E-03	0.0054	0.000E+00	0.0000	6.639E-02	0.0936	6.839E-04	0.0010	3.889E-05	0.0001	1.042E-02	0.0147
Co-60	1.834E-08	0.0000	3.492E-14	0.0000	0.000E+00	0.0000	7.200E-10	0.0000	3.871E-10	0.0000	4.664E-11	0.0000	1.416E-12	0.0000
Cs-137	3.627E-01	0.5116	4.782E-07	0.0000	0.000E+00	0.0000	6.290E-02	0.0887	5.500E-02	0.0776	1.796E-02	0.0253	2.474E-04	0.0003
Eu-152	1.595E-03	0.0022	7.085E-09	0.0000	0.000E+00	0.0000	1.090E-06	0.0000	2.116E-07	0.0000	7.349E-09	0.0000	6.857E-08	0.0000

Eu-154	7.607E-06	0.0000	3.993E-11	0.0000	0.000E+00	0.0000	6.998E-09	0.0000	1.358E-09	0.0000	4.717E-11	0.0000	4.401E-10	0.0000
Pu-238	1.170E-07	0.0000	4.186E-05	0.0001	0.000E+00	0.0000	7.179E-04	0.0010	1.475E-05	0.0000	3.168E-07	0.0000	1.128E-04	0.0002
Pu-239	1.779E-05	0.0000	3.606E-03	0.0051	0.000E+00	0.0000	6.253E-02	0.0882	1.285E-03	0.0018	1.833E-05	0.0000	9.822E-03	0.0139
Pu-241	5.330E-04	0.0008	7.509E-04	0.0011	0.000E+00	0.0000	1.295E-02	0.0183	1.338E-04	0.0002	7.574E-06	0.0000	2.032E-03	0.0029
Sr-90	4.298E-05	0.0001	3.217E-07	0.0000	0.000E+00	0.0000	2.365E-02	0.0334	4.773E-03	0.0067	1.417E-03	0.0020	1.240E-05	0.0000
Total	3.676E-01	0.5185	8.249E-03	0.0116	0.000E+00	0.0000	2.291E-01	0.3232	6.189E-02	0.0873	1.944E-02	0.0274	2.264E-02	0.0319

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.140E+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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.412E-02	0.1186
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.949E-08	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.988E-01	0.7035
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.596E-03	0.0023
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.616E-06	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.876E-04	0.0013
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.728E-02	0.1090
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.640E-02	0.0231
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.989E-02	0.0422
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.090E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:25 Page 22
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.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-	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.
Am-241	1.249E-03	0.0096	1.747E-03	0.0135	0.000E+00	0.0000	3.023E-02	0.2335	3.139E-04	0.0024	1.767E-05	0.0001	4.727E-03	0.0365
Co-60	4.330E-19	0.0000	8.246E-25	0.0000	0.000E+00	0.0000	1.700E-20	0.0000	9.141E-21	0.0000	1.101E-21	0.0000	3.343E-23	0.0000
Cs-137	4.923E-03	0.0380	6.491E-09	0.0000	0.000E+00	0.0000	8.537E-04	0.0066	7.466E-04	0.0058	2.438E-04	0.0019	3.358E-06	0.0000
Eu-152	9.934E-08	0.0000	4.414E-13	0.0000	0.000E+00	0.0000	6.790E-11	0.0000	1.318E-11	0.0000	4.577E-13	0.0000	4.270E-12	0.0000
Eu-154	3.261E-12	0.0000	1.712E-17	0.0000	0.000E+00	0.0000	3.000E-15	0.0000	5.822E-16	0.0000	2.022E-17	0.0000	1.887E-16	0.0000
Pu-238	2.747E-08	0.0000	9.589E-06	0.0001	0.000E+00	0.0000	1.644E-04	0.0013	3.380E-06	0.0000	5.654E-08	0.0000	2.582E-05	0.0002
Pu-239	1.761E-05	0.0001	3.569E-03	0.0276	0.000E+00	0.0000	6.189E-02	0.4779	1.272E-03	0.0098	1.814E-05	0.0001	9.721E-03	0.0751
Pu-241	2.442E-04	0.0019	3.419E-04	0.0026	0.000E+00	0.0000	5.913E-03	0.0457	6.132E-05	0.0005	9.458E-06	0.0000	9.251E-04	0.0071
Sr-90	3.695E-07	0.0000	2.766E-09	0.0000	0.000E+00	0.0000	2.033E-04	0.0016	4.104E-05	0.0000	1.219E-05	0.0001	1.066E-07	0.0000
Total	6.434E-03	0.0497	5.668E-03	0.0438	0.000E+00	0.0000	9.925E-02	0.7665	2.438E-03	0.0188	2.952E-04	0.0023	1.540E-02	0.1190

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.828E-02	0.2957
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.603E-19	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.770E-03	0.0523
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.943E-08	0.0000
Eu-154	0.000E+00	0.0000	0.000E+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-12	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.033E-04	0.0016
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.648E-02	0.5907
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.489E-03	0.0578
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.570E-04	0.0020
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.295E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:25 Page 23
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.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 = 7.810E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	1.683E-04	0.0000	2.269E-04	0.0000	0.000E+00	0.0000	4.071E-03	0.0008	4.585E-05	0.0000	2.323E-06	0.0000	6.139E-04	0.0001
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	7.299E-08	0.0000	9.624E-14	0.0000	0.000E+00	0.0000	1.266E-08	0.0000	1.107E-08	0.0000	3.615E-09	0.0000	4.979E-11	0.0000
Eu-152	1.322E-18	0.0000	9.905E-17	0.0000	0.000E+00	0.0000	3.444E-16	0.0000	6.684E-17	0.0000	3.286E-19	0.0000	2.166E-17	0.0000
Eu-154	1.111E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.022E-31	0.0000	1.984E-32	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	4.667E-09	0.0000	2.180E-07	0.0000	0.000E+00	0.0000	3.713E-06	0.0000	7.731E-08	0.0000	7.060E-09	0.0000	5.747E-07	0.0000
Pu-239	1.716E-05	0.0000	3.475E-03	0.0007	0.000E+00	0.0000	6.026E-02	0.0120	1.238E-03	0.0002	1.767E-05	0.0000	9.465E-03	0.0019
Pu-241	3.281E-05	0.0000	4.439E-05	0.0000	0.000E+00	0.0000	7.938E-04	0.0002	8.874E-06	0.0000	4.540E-07	0.0000	1.201E-04	0.0000
Sr-90	1.683E-12	0.0000	1.260E-14	0.0000	0.000E+00	0.0000	9.259E-10	0.0000	1.869E-10	0.0000	5.549E-11	0.0000	4.855E-13	0.0000
Total	2.183E-04	0.0000	3.747E-03	0.0007	0.000E+00	0.0000	6.513E-02	0.0129	1.293E-03	0.0003	3.045E-05	0.0000	1.020E-02	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 = 7.810E+02 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	4.292E+00	0.8521	0.000E+00	0.0000	0.000E+00	0.0000	6.402E-01	0.1271	3.894E-03	0.0008	3.811E-04	0.0001	4.942E+00	0.9811
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.004E-07	0.0000

Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.342E-16	0.0000
Eu-154	0.000E+00	0.0000	0.000E+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-28	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.594E-06	0.0000
Pu-239	2.768E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.094E-24	0.0000	1.015E-26	0.0000	2.474E-26	0.0000	7.447E-02	0.0148
Pu-241	1.724E-02	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	2.499E-03	0.0005	1.337E-05	0.0000	1.455E-06	0.0000	2.075E-02	0.0041
Sr-90	0.000E+00	0.0000	0.000E+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-09	0.0000
Total	4.309E+00	0.8555	0.000E+00	0.0000	0.000E+00	0.0000	6.427E-01	0.1276	3.907E-03	0.0008	3.826E-04	0.0001	5.037E+00	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:25 Page 24
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.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-	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.
Am-241	7.062E-05	0.0000	8.978E-05	0.0000	0.000E+00	0.0000	1.706E-03	0.0007	2.147E-05	0.0000	9.377E-07	0.0000	2.429E-04	0.0001
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	4.620E-10	0.0000	6.091E-16	0.0000	0.000E+00	0.0000	8.012E-11	0.0000	7.007E-11	0.0000	2.288E-11	0.0000	3.151E-13	0.0000
Eu-152	1.477E-23	0.0000	9.766E-17	0.0000	0.000E+00	0.0000	3.396E-16	0.0000	6.590E-17	0.0000	9.156E-19	0.0000	2.136E-17	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	6.171E-09	0.0000	4.241E-08	0.0000	0.000E+00	0.0000	7.151E-07	0.0000	1.561E-08	0.0000	5.181E-09	0.0000	1.043E-07	0.0000
Pu-239	1.696E-05	0.0000	3.433E-03	0.0013	0.000E+00	0.0000	5.953E-02	0.0234	1.223E-03	0.0005	1.745E-05	0.0000	9.351E-03	0.0037
Pu-241	1.370E-05	0.0000	1.756E-05	0.0000	0.000E+00	0.0000	3.311E-04	0.0001	4.107E-06	0.0000	1.829E-07	0.0000	4.752E-05	0.0000
Sr-90	6.222E-15	0.0000	4.658E-17	0.0000	0.000E+00	0.0000	3.424E-12	0.0000	6.911E-13	0.0000	2.052E-13	0.0000	1.795E-15	0.0000
Total	1.013E-04	0.0000	3.541E-03	0.0014	0.000E+00	0.0000	6.157E-02	0.0242	1.249E-03	0.0005	1.858E-05	0.0000	9.642E-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

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.
Am-241	1.789E+00	0.7025	0.000E+00	0.0000	0.000E+00	0.0000	2.752E-01	0.1080	1.917E-03	0.0008	1.677E-04	0.0001	2.069E+00	0.8122
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.354E-10	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.254E-16	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.887E-07	0.0000
Pu-239	1.130E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.736E-18	0.0000	4.800E-21	0.0000	1.056E-20	0.0000	7.357E-02	0.0289
Pu-241	3.502E-01	0.1375	0.000E+00	0.0000	0.000E+00	0.0000	5.386E-02	0.0211	3.751E-04	0.0001	3.282E-05	0.0000	4.049E-01	0.1589
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.328E-12	0.0000
Total	2.140E+00	0.8400	0.000E+00	0.0000	0.000E+00	0.0000	3.291E-01	0.1292	2.292E-03	0.0009	2.006E-04	0.0001	2.547E+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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	8.023E-01	7.989E-01	7.921E-01	7.689E-01	7.063E-01	5.246E-01	4.943E-01	2.243E-01	2.907E+01	1.217E+01
Am-241	Np-237+D	1.000E+00	2.554E-06	7.946E-06	1.871E-05	5.566E-05	1.551E-04	4.402E-04	4.872E-04	8.899E-04	1.098E-03	1.221E-03
Am-241	U-233	1.000E+00	6.011E-14	3.365E-13	1.562E-12	1.278E-11	1.012E-10	9.593E-10	1.214E-09	6.091E-09	2.014E-08	7.283E-08
Am-241	Th-229+D	1.000E+00	1.230E-17	1.709E-16	1.932E-15	5.008E-14	1.186E-12	3.850E-11	5.587E-11	7.937E-10	8.047E-09	1.352E-08
Am-241	ΣDSR(j)		8.023E-01	7.989E-01	7.921E-01	7.690E-01	7.064E-01	5.250E-01	4.948E-01	2.252E-01	2.907E+01	1.217E+01
Co-60	Co-60	1.000E+00	9.500E+00	8.329E+00	6.402E+00	2.549E+00	1.835E-01	1.838E-05	2.914E-06	6.880E-17	2.662E-44	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	2.728E+00	2.666E+00	2.545E+00	2.165E+00	1.364E+00	2.704E-01	1.959E-01	2.655E-03	3.937E-08	2.492E-10
Eu-152	Eu-152	7.208E-01	2.901E+00	2.754E+00	2.481E+00	1.723E+00	6.084E-01	1.590E-02	7.671E-03	4.778E-07	6.358E-18	7.105E-23
Eu-152	Eu-152	2.792E-01	1.124E+00	1.067E+00	9.611E-01	6.676E-01	2.357E-01	6.159E-03	2.871E-03	1.851E-07	2.463E-18	2.752E-23
Eu-152	Gd-152	2.792E-01	9.548E-17	2.800E-16	6.213E-16	1.571E-15	2.966E-15	3.692E-15	3.699E-15	3.665E-15	3.552E-15	3.503E-15
Eu-152	ΣDSR(j)		1.124E+00	1.067E+00	9.611E-01	6.676E-01	2.357E-01	6.159E-03	2.871E-03	1.851E-07	3.555E-15	3.503E-15
Eu-154	Eu-154	1.000E+00	4.350E+00	4.020E+00	3.434E+00	1.978E+00	4.087E-01	1.640E-03	5.440E-04	2.332E-10	7.946E-27	2.526E-34
Pu-238	Pu-238	1.840E-09	1.264E-09	1.254E-09	1.234E-09	1.167E-09	9.962E-10	5.720E-10	5.119E-10	1.172E-10	2.588E-12	4.562E-13
Pu-238	Pu-238	1.000E+00	6.868E-01	6.813E-01	6.706E-01	6.344E-01	5.414E-01	3.109E-01	2.782E-01	6.369E-02	1.407E-03	2.479E-04
Pu-238	U-234	1.000E+00	2.133E-07	6.509E-07	1.517E-06	4.427E-06	1.179E-05	2.887E-05	3.107E-05	4.088E-05	2.792E-05	2.219E-05
Pu-238	Th-230	1.000E+00	6.594E-13	4.362E-12	2.233E-11	1.929E-10	1.526E-09	1.359E-08	1.699E-08	7.439E-08	2.104E-07	2.541E-07
Pu-238	Ra-226+D	1.000E+00	6.890E-15	1.081E-13	1.285E-12	3.392E-11	7.926E-10	2.396E-08	3.429E-08	4.127E-07	3.075E-06	4.652E-06
Pu-238	Pb-210+D	1.000E+00	5.579E-17	1.477E-15	3.296E-14	2.264E-12	1.335E-10	9.519E-09	1.467E-08	2.623E-07	2.323E-06	3.593E-06
Pu-238	ΣDSR(j)		6.868E-01	6.813E-01	6.706E-01	6.344E-01	5.414E-01	3.109E-01	2.782E-01	6.373E-02	1.440E-03	2.786E-04
Pu-239	Pu-239	1.000E+00	7.624E-01	7.624E-01	7.623E-01	7.620E-01	7.612E-01	7.582E-01	7.576E-01	7.498E-01	7.301E-01	7.213E-01
Pu-239	U-235+D	1.000E+00	2.917E-10	8.791E-10	2.053E-09	6.140E-09	1.764E-08	5.593E-08	6.323E-08	1.500E-07	3.048E-07	3.509E-07
Pu-239	Pa-231	1.000E+00	7.091E-14	5.286E-13	2.870E-12	2.593E-11	2.165E-10	2.238E-09	2.875E-09	1.732E-08	8.361E-08	1.181E-07
Pu-239	Ac-227+D	1.000E+00	3.282E-16	4.231E-15	4.429E-14	1.043E-12	2.115E-11	4.632E-10	6.312E-10	5.084E-09	2.762E-08	3.964E-08
Pu-239	ΣDSR(j)		7.624E-01	7.624E-01	7.623E-01	7.620E-01	7.612E-01	7.582E-01	7.576E-01	7.498E-01	7.301E-01	7.213E-01
Pu-241	Pu-241	1.000E+00	1.438E-02	1.370E-02	1.244E-02	8.883E-03	3.390E-03	1.164E-04	5.933E-05	7.635E-09	6.637E-19	1.743E-23
Pu-241	Am-241	1.000E+00	6.340E-04	1.858E-03	4.119E-03	1.037E-02	1.903E-02	1.893E-02	1.793E-02	8.192E-03	2.275E-02	4.444E-01
Pu-241	Np-237+D	1.000E+00	1.295E-09	9.468E-09	4.965E-08	4.006E-07	2.499E-06	1.205E-05	1.376E-05	2.860E-05	3.654E-05	4.043E-05
Pu-241	U-233	1.000E+00	2.634E-17	3.080E-16	2.984E-15	6.502E-14	1.206E-12	2.198E-11	2.915E-11	1.821E-10	6.535E-10	2.151E-09
Pu-241	Th-229+D	1.000E+00	4.085E-21	1.136E-19	2.695E-18	1.924E-16	1.119E-14	7.603E-13	1.168E-12	2.212E-11	2.528E-10	4.316E-10
Pu-241	ΣDSR(j)		1.501E-02	1.556E-02	1.656E-02	1.926E-02	2.243E-02	1.905E-02	1.801E-02	8.220E-03	2.278E-02	4.444E-01
Pu-241+D	Pu-241+D	2.450E-05	7.921E-06	7.548E-06	6.855E-06	4.893E-06	1.868E-06	6.414E-08	3.268E-08	4.206E-12	3.656E-22	9.601E-27
Pu-241+D	Np-237+D	2.450E-05	6.170E-11	1.883E-10	4.252E-10	1.095E-09	2.122E-09	2.702E-09	2.705E-09	2.613E-09	2.365E-09	2.260E-09
Pu-241+D	U-233	2.450E-05	1.455E-18	8.037E-18	3.626E-17	2.696E-16	1.670E-15	8.758E-15	1.019E-14	2.706E-14	5.500E-14	6.233E-14
Pu-241+D	Th-229+D	2.450E-05	2.986E-22	4.111E-21	4.553E-20	1.098E-18	2.156E-17	4.333E-16	5.851E-16	4.604E-15	2.754E-14	4.167E-14
Pu-241+D	ΣDSR(j)		7.921E-06	7.548E-06	6.855E-06	4.894E-06	1.870E-06	6.684E-08	3.538E-08	2.617E-09	2.365E-09	2.260E-09

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Sr-90+D	Sr-90+D	1.000E+00	9.956E+00	9.704E+00	9.221E+00	7.709E+00	4.623E+00	7.719E-01	5.396E-01	4.640E-03	2.113E-08	7.812E-11

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	3.116E+01	3.129E+01	3.156E+01	3.251E+01	3.539E+01	4.762E+01	5.053E+01	1.110E+02	8.600E-01	2.054E+00
Co-60	2.632E+00	3.002E+00	3.905E+00	9.808E+00	1.362E+02	1.360E+06	8.580E+06	*1.132E+15	*1.132E+15	*1.132E+15
Cs-137	9.164E+00	9.378E+00	9.822E+00	1.155E+01	1.833E+01	9.247E+01	1.278E+02	9.416E+03	6.351E+08	1.003E+11
Eu-152	6.212E+00	6.544E+00	7.262E+00	1.046E+01	2.962E+01	1.133E+03	2.349E+03	3.772E+07	*1.765E+14	*1.765E+14
Eu-154	5.747E+00	6.219E+00	7.281E+00	1.264E+01	6.117E+01	1.524E+04	4.596E+04	1.172E+11	*2.639E+14	*2.639E+14
Pu-238	3.640E+01	3.669E+01	3.728E+01	3.940E+01	4.617E+01	8.042E+01	8.985E+01	3.933E+02	1.736E+04	8.973E+04
Pu-239	3.279E+01	3.279E+01	3.280E+01	3.281E+01	3.284E+01	3.297E+01	3.300E+01	3.334E+01	3.424E+01	3.466E+01
Pu-241	1.664E+03	1.606E+03	1.509E+03	1.298E+03	1.115E+03	1.312E+03	1.388E+03	3.041E+03	1.097E+03	5.625E+01
Sr-90	2.511E+00	2.576E+00	2.711E+00	3.243E+00	5.408E+00	3.239E+01	4.633E+01	5.388E+03	1.183E+09	3.200E+11

*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)
Am-241	1.700E-01	782 ± 2	3.020E+01	8.278E-01	8.023E-01	3.116E+01
Co-60	6.690E-03	0.000E+00	9.500E+00	2.632E+00	9.500E+00	2.632E+00
Cs-137	2.550E+00	0.000E+00	2.728E+00	9.164E+00	2.728E+00	9.164E+00
Eu-152	1.500E-01	0.000E+00	4.024E+00	6.212E+00	4.024E+00	6.212E+00
Eu-154	1.400E-02	0.000E+00	4.350E+00	5.747E+00	4.350E+00	5.747E+00
Pu-238	3.190E-03	0.000E+00	6.868E-01	3.640E+01	6.868E-01	3.640E+01
Pu-239	1.020E-01	0.000E+00	7.624E-01	3.279E+01	7.624E-01	3.279E+01
Pu-241	9.110E-01	837 ± 2	8.002E-01	3.124E+01	1.502E-02	1.664E+03
Sr-90	5.540E-02	0.000E+00	9.956E+00	2.511E+00	9.956E+00	2.511E+00

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.364E-01	1.358E-01	1.347E-01	1.307E-01	1.201E-01	8.918E-02	8.403E-02	3.813E-02	4.941E+00	2.069E+00

Am-241	Pu-241	1.000E+00	5.776E-04	1.692E-03	3.753E-03	9.449E-03	1.734E-02	1.724E-02	1.634E-02	7.463E-03	2.072E-02	4.048E-01
Am-241	ΣDOSE(j)		1.370E-01	1.375E-01	1.384E-01	1.402E-01	1.374E-01	1.064E-01	1.004E-01	4.560E-02	4.962E+00	2.474E+00
Np-237	Am-241	1.000E+00	4.342E-07	1.351E-06	3.181E-06	9.462E-06	2.636E-05	7.484E-05	8.282E-05	1.513E-04	1.866E-04	2.076E-04
Np-237	Pu-241	1.000E+00	1.180E-09	8.625E-09	4.523E-08	3.649E-07	2.277E-06	1.098E-05	1.254E-05	2.606E-05	3.328E-05	3.683E-05
Np-237	Pu-241	2.450E-05	5.621E-11	1.716E-10	3.874E-10	9.974E-10	1.933E-09	2.461E-09	2.464E-09	2.381E-09	2.155E-09	2.059E-09
Np-237	ΣDOSE(j)		4.354E-07	1.360E-06	3.227E-06	9.828E-06	2.864E-05	8.582E-05	9.536E-05	1.773E-04	2.199E-04	2.444E-04
U-233	Am-241	1.000E+00	1.022E-14	5.720E-14	2.655E-13	2.173E-12	1.720E-11	1.631E-10	2.064E-10	1.035E-09	3.424E-09	1.238E-08
U-233	Pu-241	1.000E+00	2.400E-17	2.806E-16	2.719E-15	5.923E-14	1.098E-12	2.002E-11	2.655E-11	1.659E-10	5.953E-10	1.960E-09
U-233	Pu-241	2.450E-05	1.326E-18	7.322E-18	3.303E-17	2.456E-16	1.521E-15	7.978E-15	9.286E-15	2.465E-14	5.011E-14	5.678E-14
U-233	ΣDOSE(j)		1.024E-14	5.749E-14	2.682E-13	2.233E-12	1.830E-11	1.831E-10	2.330E-10	1.201E-09	4.019E-09	1.434E-08
Th-229	Am-241	1.000E+00	2.091E-18	2.906E-17	3.285E-16	8.513E-15	2.017E-13	6.546E-12	9.499E-12	1.349E-10	1.368E-09	2.299E-09
Th-229	Pu-241	1.000E+00	3.722E-21	1.035E-19	2.455E-18	1.753E-16	1.020E-14	6.927E-13	1.064E-12	2.015E-11	2.303E-10	3.932E-10
Th-229	Pu-241	2.450E-05	2.721E-22	3.745E-21	4.148E-20	1.000E-18	1.964E-17	3.947E-16	5.330E-16	4.194E-15	2.508E-14	3.796E-14
Th-229	ΣDOSE(j)		2.095E-18	2.916E-17	3.310E-16	8.689E-15	2.119E-13	7.239E-12	1.056E-11	1.551E-10	1.598E-09	2.692E-09
Co-60	Co-60	1.000E+00	6.355E-02	5.572E-02	4.283E-02	1.705E-02	1.228E-03	1.230E-07	1.949E-09	4.603E-19	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	6.957E+00	6.798E+00	6.491E+00	5.521E+00	3.477E+00	6.894E-01	4.988E-01	6.770E-03	1.004E-07	6.354E-10
Eu-152	Eu-152	7.208E-01	4.351E-01	4.130E-01	3.722E-01	2.585E-01	9.126E-02	2.385E-03	1.151E-03	7.167E-08	9.538E-19	1.066E-23
Eu-152	Eu-152	2.792E-01	1.685E-01	1.600E-01	1.442E-01	1.001E-01	3.535E-02	9.239E-04	4.457E-04	2.776E-08	3.694E-19	4.128E-24
Eu-152	ΣDOSE(j)		6.037E-01	5.730E-01	5.164E-01	3.587E-01	1.266E-01	3.309E-03	1.596E-03	9.943E-08	1.323E-18	1.478E-23
Gd-152	Eu-152	2.792E-01	1.432E-17	4.199E-17	9.319E-17	2.356E-16	4.448E-16	5.539E-16	5.549E-16	5.497E-16	5.329E-16	5.254E-16
Eu-154	Eu-154	1.000E+00	6.090E-02	5.628E-02	4.807E-02	2.769E-02	5.722E-03	2.296E-05	7.616E-06	3.264E-12	1.112E-28	0.000E+00
Pu-238	Pu-238	1.840E-09	4.031E-12	3.999E-12	3.936E-12	3.724E-12	3.178E-12	1.825E-12	1.633E-12	3.738E-13	8.257E-15	1.455E-15
Pu-238	Pu-238	1.000E+00	2.191E-03	2.174E-03	2.139E-03	2.024E-03	1.727E-03	9.916E-04	8.875E-04	2.032E-04	4.487E-06	7.908E-07
Pu-238	ΣDOSE(j)		2.191E-03	2.174E-03	2.139E-03	2.024E-03	1.727E-03	9.916E-04	8.875E-04	2.032E-04	4.487E-06	7.908E-07
U-234	Pu-238	1.000E+00	6.805E-10	2.076E-09	4.838E-09	1.412E-08	3.760E-08	9.211E-08	9.912E-08	1.304E-07	8.906E-08	7.078E-08
Th-230	Pu-238	1.000E+00	2.104E-15	1.392E-14	7.125E-14	6.154E-13	4.869E-12	4.336E-11	5.420E-11	2.373E-10	6.711E-10	8.105E-10
Ra-226	Pu-238	1.000E+00	2.198E-17	3.447E-16	4.098E-15	1.082E-13	2.528E-12	7.644E-11	1.094E-10	1.316E-09	9.810E-09	1.484E-08
Pb-210	Pu-238	1.000E+00	1.780E-19	4.712E-18	1.052E-16	7.222E-15	4.258E-13	3.036E-11	4.679E-11	8.366E-10	7.411E-09	1.146E-08
Pu-239	Pu-239	1.000E+00	7.777E-02	7.776E-02	7.775E-02	7.772E-02	7.764E-02	7.734E-02	7.728E-02	7.648E-02	7.447E-02	7.357E-02
U-235	Pu-239	1.000E+00	2.975E-11	8.967E-11	2.094E-10	6.263E-10	1.799E-09	5.705E-09	6.450E-09	1.530E-08	3.109E-08	3.579E-08
Pa-231	Pu-239	1.000E+00	7.233E-15	5.392E-14	2.928E-13	2.645E-12	2.209E-11	2.282E-10	2.933E-10	1.767E-09	8.528E-09	1.204E-08
Ac-227	Pu-239	1.000E+00	3.348E-17	4.315E-16	4.518E-15	1.063E-13	2.157E-12	4.725E-11	6.438E-11	5.186E-10	2.818E-09	4.044E-09

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	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	1.310E-02	1.248E-02	1.134E-02	8.093E-03	3.089E-03	1.061E-04	5.405E-05	6.956E-09	6.047E-19	1.588E-23
Pu-241	Pu-241	2.450E-05	7.216E-06	6.876E-06	6.245E-06	4.458E-06	1.701E-06	5.843E-08	2.977E-08	3.831E-12	3.331E-22	8.746E-27
Pu-241	ΣDOSE(j)		1.311E-02	1.249E-02	1.134E-02	8.097E-03	3.090E-03	1.061E-04	5.408E-05	6.959E-09	6.050E-19	1.589E-23
Sr-90	Sr-90	1.000E+00	5.515E-01	5.376E-01	5.108E-01	4.271E-01	2.561E-01	4.276E-02	2.989E-02	2.570E-04	1.170E-09	4.328E-12

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

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

S(j,t), pCi/g

Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.700E-01	1.693E-01	1.678E-01	1.629E-01	1.497E-01	1.112E-01	1.047E-01	4.753E-02	6.160E-03	2.430E-03
Am-241	Pu-241	1.000E+00	0.000E+00	1.423E-03	4.055E-03	1.133E-02	2.144E-02	2.149E-02	2.036E-02	9.302E-03	1.206E-03	4.755E-04
Am-241	ΣS(j):		1.700E-01	1.707E-01	1.719E-01	1.743E-01	1.711E-01	1.326E-01	1.251E-01	5.683E-02	7.366E-03	2.905E-03
Np-237	Am-241	1.000E+00	0.000E+00	5.494E-08	1.641E-07	5.385E-07	1.546E-06	4.437E-06	4.913E-06	8.995E-06	1.110E-05	1.088E-05
Np-237	Pu-241	1.000E+00	0.000E+00	2.325E-10	2.021E-09	1.997E-08	1.322E-07	6.500E-07	7.429E-07	1.549E-06	1.980E-06	1.947E-06
Np-237	Pu-241	2.450E-05	0.000E+00	7.057E-12	2.019E-11	5.731E-11	1.143E-10	1.464E-10	1.466E-10	1.417E-10	1.282E-10	1.225E-10
Np-237	ΣS(j):		0.000E+00	5.518E-08	1.661E-07	5.586E-07	1.678E-06	5.087E-06	5.656E-06	1.054E-05	1.308E-05	1.283E-05
U-233	Am-241	1.000E+00	0.000E+00	1.202E-13	1.078E-12	1.182E-11	1.026E-10	1.005E-09	1.275E-09	6.444E-09	2.137E-08	2.631E-08
U-233	Pu-241	1.000E+00	0.000E+00	3.403E-16	8.948E-15	3.028E-13	6.439E-12	1.231E-10	1.636E-10	1.032E-09	3.715E-09	4.620E-09
U-233	Pu-241	2.450E-05	0.000E+00	1.555E-17	1.355E-16	1.349E-15	9.147E-15	4.941E-14	5.759E-14	1.536E-13	3.128E-13	3.546E-13
U-233	ΣS(j):		0.000E+00	1.205E-13	1.087E-12	1.212E-11	1.090E-10	1.128E-09	1.438E-09	7.476E-09	2.508E-08	3.093E-08
Th-229	Am-241	1.000E+00	0.000E+00	3.785E-18	1.019E-16	3.737E-15	9.813E-14	3.303E-12	4.802E-12	6.878E-11	6.996E-10	1.175E-09
Th-229	Pu-241	1.000E+00	0.000E+00	8.056E-21	6.388E-19	7.333E-17	4.895E-15	3.486E-13	5.370E-13	1.027E-11	1.178E-10	2.011E-10
Th-229	Pu-241	2.450E-05	0.000E+00	4.915E-22	1.295E-20	4.415E-19	9.600E-18	1.997E-16	2.701E-16	2.140E-15	1.283E-14	1.942E-14
Th-229	ΣS(j):		0.000E+00	3.793E-18	1.026E-16	3.811E-15	1.030E-13	3.651E-12	5.339E-12	7.905E-11	8.173E-10	1.377E-09
Co-60	Co-60	1.000E+00	6.690E-03	5.865E-03	4.508E-03	1.795E-03	1.292E-04	1.294E-08	2.052E-09	4.845E-20	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	2.550E+00	2.492E+00	2.379E+00	2.024E+00	1.275E+00	2.527E-01	1.828E-01	2.482E-03	3.680E-08	2.329E-10
Eu-152	Eu-152	7.208E-01	1.081E-01	1.026E-01	9.249E-02	6.424E-02	2.268E-02	5.927E-04	2.859E-04	1.781E-08	2.370E-19	2.648E-24
Eu-152	Eu-152	2.792E-01	4.188E-02	3.976E-02	3.582E-02	2.488E-02	8.784E-03	2.296E-04	1.108E-04	6.898E-09	9.180E-20	1.026E-24
Eu-152	ΣS(j):		1.500E-01	1.424E-01	1.283E-01	8.912E-02	3.146E-02	8.222E-04	3.967E-04	2.471E-08	3.288E-19	3.674E-24
Gd-152	Eu-152	2.792E-01	0.000E+00	2.619E-16	7.465E-16	2.095E-15	4.075E-15	5.107E-15	5.117E-15	5.070E-15	4.915E-15	4.845E-15
Eu-154	Eu-154	1.000E+00	1.400E-02	1.294E-02	1.105E-02	6.365E-03	1.315E-03	5.279E-06	1.751E-06	7.504E-13	2.557E-29	8.130E-37
Pu-238	Pu-238	1.840E-09	5.870E-12	5.823E-12	5.732E-12	5.422E-12	4.627E-12	2.657E-12	2.378E-12	5.443E-13	1.202E-14	2.119E-15
Pu-238	Pu-238	1.000E+00	3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	1.292E-03	2.958E-04	6.534E-06	1.152E-06
Pu-238	ΣS(j):		3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	1.292E-03	2.958E-04	6.534E-06	1.152E-06
U-234	Pu-238	1.000E+00	0.000E+00	9.003E-09	2.677E-08	8.648E-08	2.375E-07	5.882E-07	6.334E-07	8.352E-07	5.707E-07	4.535E-07
Th-230	Pu-238	1.000E+00	0.000E+00	4.058E-14	3.631E-13	3.951E-12	3.353E-11	3.060E-10	3.830E-10	1.687E-09	4.778E-09	5.772E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	5.863E-18	1.575E-16	5.731E-15	1.472E-13	4.599E-12	6.593E-12	7.994E-11	5.973E-10	9.038E-10
Pb-210	Pu-238	1.000E+00	0.000E+00	4.530E-20	3.608E-18	4.206E-16	2.909E-14	2.194E-12	3.390E-12	6.136E-11	5.457E-10	8.445E-10
Pu-239	Pu-239	1.000E+00	1.020E-01	1.020E-01	1.020E-01	1.019E-01	1.018E-01	1.014E-01	1.014E-01	1.003E-01	9.768E-02	9.650E-02
U-235	Pu-239	1.000E+00	0.000E+00	1.004E-10	3.009E-10	9.990E-10	2.964E-09	9.503E-09	1.075E-08	2.558E-08	5.201E-08	5.988E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	1.062E-15	9.544E-15	1.055E-13	9.357E-13	9.878E-12	1.271E-11	7.694E-11	3.720E-10	5.255E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	1.117E-17	2.963E-16	1.031E-14	2.355E-13	5.376E-12	7.340E-12	5.964E-11	3.249E-10	4.665E-10

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Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (no aquatic food)
File : combined_upper_areas_and_filter_bed_areas.rad

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

S(j,t), pCi/g

Nuclide (j)	Parent (i)	THF(i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	1.140E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	9.110E-01	8.681E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	3.759E-03	4.937E-07	4.205E-17	1.104E-21
Pu-241	Pu-241	2.450E-05	2.232E-05	2.127E-05	1.932E-05	1.379E-05	5.262E-06	1.807E-07	9.209E-08	1.185E-11	1.030E-21	2.705E-26
Pu-241	ΣS(j):		9.110E-01	8.682E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	3.759E-03	4.937E-07	4.205E-17	1.104E-21
Sr-90	Sr-90	1.000E+00	5.540E-02	5.400E-02	5.131E-02	4.290E-02	2.572E-02	4.295E-03	3.003E-03	2.592E-05	1.176E-10	4.347E-13

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 74.40 seconds

Attachment 10. Combined Upper Area and Filter Bed Area with Aquatic Food Only (Summary File)

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Dose Conversion Factor (and Related) Parameter Summary
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2(1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2(2)
B-1	Co-60	2.190E-04	2.190E-04	DCF2(3)
B-1	Cs-137+D	3.190E-05	3.190E-05	DCF2(4)
B-1	Eu-152	2.210E-04	2.210E-04	DCF2(5)
B-1	Eu-154	2.860E-04	2.860E-04	DCF2(7)
B-1	Gd-152	2.430E-01	2.430E-01	DCF2(8)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2(9)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2(10)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2(11)
B-1	Pu-238	3.920E-01	3.920E-01	DCF2(12)

B-1	Pu-239	4.290E-01	4.290E-01	DCF2(14)
B-1	Pu-241	8.250E-03	8.250E-03	DCF2(15)
B-1	Pu-241+D	8.254E-03	8.250E-03	DCF2(16)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2(17)
B-1	Sr-90+D	1.308E-03	1.300E-03	DCF2(18)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2(19)
B-1	Th-230	3.260E-01	3.260E-01	DCF2(20)
B-1	U-233	1.350E-01	1.350E-01	DCF2(21)
B-1	U-234	1.320E-01	1.320E-01	DCF2(22)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2(23)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3(1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3(2)
D-1	Co-60	2.690E-05	2.690E-05	DCF3(3)
D-1	Cs-137+D	5.000E-05	5.000E-05	DCF3(4)
D-1	Eu-152	6.480E-06	6.480E-06	DCF3(5)
D-1	Eu-154	9.550E-06	9.550E-06	DCF3(6)
D-1	Gd-152	1.610E-04	1.610E-04	DCF3(8)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3(9)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3(10)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3(11)
D-1	Pu-238	3.200E-03	3.200E-03	DCF3(12)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3(14)
D-1	Pu-241	6.840E-05	6.840E-05	DCF3(15)
D-1	Pu-241+D	7.157E-05	6.840E-05	DCF3(16)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3(17)
D-1	Sr-90+D	1.528E-04	1.420E-04	DCF3(18)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3(19)
D-1	Th-230	5.480E-04	5.480E-04	DCF3(20)
D-1	U-233	2.890E-04	2.890E-04	DCF3(21)
D-1	U-234	2.830E-04	2.830E-04	DCF3(22)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3(23)
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)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				

D-34	Co-60	, plant/soil concentration ratio, dimensionless	8.000E-02	8.000E-02	RTF(3,1)
D-34	Co-60	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-02	2.000E-02	RTF(3,2)
D-34	Co-60	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(3,3)
D-34					
D-34	Cs-137+D	, plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(4,1)
D-34	Cs-137+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(4,2)
D-34	Cs-137+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(4,3)
D-34					
D-34	Eu-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(5,1)
D-34	Eu-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(5,2)
D-34	Eu-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(5,3)
D-34					
D-34	Eu-154	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(7,1)
D-34	Eu-154	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(7,2)
D-34	Eu-154	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-05	5.000E-05	RTF(7,3)
D-34					
D-34	Gd-152	, plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(8,1)
D-34	Gd-152	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-03	2.000E-03	RTF(8,2)
D-34	Gd-152	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-05	2.000E-05	RTF(8,3)
D-34					
D-34	Np-237+D	, plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(9,1)
D-34	Np-237+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Np-237+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(9,3)
D-34					
D-34	Pa-231	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(10,1)
D-34	Pa-231	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-03	5.000E-03	RTF(10,2)
D-34	Pa-231	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(10,3)
D-34					
D-34	Pb-210+D	, plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(11,1)
D-34	Pb-210+D	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(11,2)
D-34	Pb-210+D	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(11,3)
D-34					
D-34	Pu-238	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(12,1)
D-34	Pu-238	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(12,2)
D-34	Pu-238	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(12,3)
D-34					
D-34	Pu-239	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(14,1)
D-34	Pu-239	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(14,2)
D-34	Pu-239	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(14,3)
D-34					
D-34	Pu-241	, plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(15,1)
D-34	Pu-241	, beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(15,2)
D-34	Pu-241	, milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(15,3)
D-34					

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

	Current	Base	Parameter

Menu	Parameter	Value	Case*	Name
D-34	Pu-241+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(16,1)
D-34	Pu-241+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(16,2)
D-34	Pu-241+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-06	1.000E-06	RTF(16,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,3)
D-34				
D-34	Sr-90+D , plant/soil concentration ratio, dimensionless	3.000E-01	3.000E-01	RTF(18,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(18,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(18,3)
D-34				
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(19,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(19,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(19,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(20,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(20,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(20,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(21,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(21,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(22,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(22,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(22,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(23,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(23,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(23,3)
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.500E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	3.000E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Co-60 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Co-60 , crustacea and mollusks	2.000E+02	2.000E+02	BIOFAC(3,2)
D-5				
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(4,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Eu-152 , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Eu-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(5,2)
D-5				
D-5	Eu-154 , fish	5.000E+01	5.000E+01	BIOFAC(7,1)

D-5	Eu-154 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(7,2)

Dose Conversion Factor (and Related) Parameter Summary (continued)
File: FGR 13 MORBIDITY

Menu	Parameter	Current Value	Base Case*	Parameter Name
D-5	Gd-152 , fish	2.500E+01	2.500E+01	BIOFAC(8,1)
D-5	Gd-152 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(8,2)
D-5				
D-5	Np-237+D , fish	3.000E+01	3.000E+01	BIOFAC(9,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(9,2)
D-5				
D-5	Pa-231 , fish	1.000E+01	1.000E+01	BIOFAC(10,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(10,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(11,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(11,2)
D-5				
D-5	Pu-238 , fish	3.000E+01	3.000E+01	BIOFAC(12,1)
D-5	Pu-238 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(12,2)
D-5				
D-5	Pu-239 , fish	3.000E+01	3.000E+01	BIOFAC(14,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(14,2)
D-5				
D-5	Pu-241 , fish	3.000E+01	3.000E+01	BIOFAC(15,1)
D-5	Pu-241 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(15,2)
D-5				
D-5	Pu-241+D , fish	3.000E+01	3.000E+01	BIOFAC(16,1)
D-5	Pu-241+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(16,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(18,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(18,2)
D-5				
D-5	Th-229+D , fish	1.000E+02	1.000E+02	BIOFAC(19,1)
D-5	Th-229+D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(19,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(20,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(20,2)
D-5				
D-5	U-233 , fish	1.000E+01	1.000E+01	BIOFAC(21,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(22,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(22,2)

D-5				
D-5	U-235+D , fish	1.000E+01	1.000E+01	BIOFAC(23,1)
D-5	U-235+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(23,2)

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

Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.310E+05	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	6.100E+00	2.000E+00	---	THICK0
R011	Length parallel to aquifer flow (m)	3.620E+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)	7.810E+02	1.000E+03	---	T(8)
R011	Times for calculations (yr)	1.000E+03	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.700E-01	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Co-60	6.690E-03	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Cs-137	2.550E+00	0.000E+00	---	S1(4)
R012	Initial principal radionuclide (pCi/g): Eu-152	1.500E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Eu-154	1.400E-02	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Pu-238	3.190E-03	0.000E+00	---	S1(12)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.020E-01	0.000E+00	---	S1(14)
R012	Initial principal radionuclide (pCi/g): Pu-241	9.110E-01	0.000E+00	---	S1(15)
R012	Initial principal radionuclide (pCi/g): Sr-90	5.540E-02	0.000E+00	---	S1(18)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Co-60	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(4)
R012	Concentration in groundwater (pCi/L): Eu-152	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Eu-154	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Pu-238	not used	0.000E+00	---	W1(12)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(14)
R012	Concentration in groundwater (pCi/L): Pu-241	not used	0.000E+00	---	W1(15)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(18)
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)	1.500E+00	1.500E+00	---	DENSCZ

R013	Contaminated zone erosion rate (m/yr)	0.000E+00	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.000E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.000E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	2.270E+02	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	5.300E+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	5.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	9.700E-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

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R013	Watershed area for nearby stream or pond (m**2)	5.440E+06	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)	1.500E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.300E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	3.000E+01	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	2.000E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	4.050E+00	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	1.000E-03	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	1.000E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	MB	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)	3.050E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.500E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	4.000E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.000E-01	2.000E-01	---	EPUZ(1)
R015	Unsat. zone 1, field capacity	2.000E-01	2.000E-01	---	FCUZ(1)
R015	Unsat. zone 1, soil-specific b parameter	1.040E+01	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	3.000E+01	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	2.000E+01	2.000E+01	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.644E-03	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

R016	Distribution coefficients for Co-60				
R016	Contaminated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCC(3)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCU(3,1)
R016	Saturated zone (cm**3/g)	1.000E+03	1.000E+03	---	DCNUCS(3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.932E-05	ALEACH(3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(3)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCC(4)
R016	Unsaturated zone 1 (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCU(4,1)
R016	Saturated zone (cm**3/g)	4.600E+03	4.600E+03	---	DCNUCS(4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.159E-05	ALEACH(4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(4)
R016	Distribution coefficients for Eu-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.248E-02	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E-02	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E-02	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)

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Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.rad

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Eu-154				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E-02	DCNUCC(7)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E-02	DCNUCU(7,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E-02	DCNUCS(7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(7)
R016	Distribution coefficients for Pu-238				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(12)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(12,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(12)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(14)
R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(14,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(14)
R016	Distribution coefficients for Pu-241				
R016	Contaminated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCC(15)

R016	Unsaturated zone 1 (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCU(15,1)
R016	Saturated zone (cm**3/g)	2.000E+03	2.000E+03	---	DCNUCS(15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.666E-05	ALEACH(15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(15)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCC(18)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCU(18,1)
R016	Saturated zone (cm**3/g)	3.000E+01	3.000E+01	---	DCNUCS(18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.768E-03	ALEACH(18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(18)
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	2.644E-03	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for daughter Gd-152				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCC(8)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCU(8,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	8.249E+02	DCNUCS(8)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.464E-05	ALEACH(8)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(8)

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 Np-237				
R016	Contaminated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCC(9)
R016	Unsaturated zone 1 (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCU(9,1)
R016	Saturated zone (cm**3/g)	-1.000E+00	-1.000E+00	2.574E+02	DCNUCS(9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.670E-04	ALEACH(9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(9)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(10)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(10,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.069E-03	ALEACH(10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(10)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(11)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(11,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(11)

R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.324E-04	ALEACH(11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(11)
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCC(17)
R016	Unsaturated zone 1 (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCU(17,1)
R016	Saturated zone (cm**3/g)	7.000E+01	7.000E+01	---	DCNUCS(17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.631E-04	ALEACH(17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(17)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(19)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(19,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(19)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.889E-07	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)

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 U-234				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(22)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(22,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(22)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(22)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(22)
R016	Distribution coefficients for daughter U-235				
R016	Contaminated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCC(23)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCU(23,1)
R016	Saturated zone (cm**3/g)	5.000E+01	5.000E+01	---	DCNUCS(23)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.063E-03	ALEACH(23)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(23)

R017	Inhalation rate (m**3/yr)	not used	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	not used	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	not used	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	not used	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	not used	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	not used	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	not used	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)
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)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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)	5.400E+00	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)

R018	Soil ingestion rate (g/yr)	not used	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	1.000E+00	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)	not used	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

Site-Specific Parameter Summary (continued)

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

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
C14	DCF correction factor for gaseous forms of C14	not used	0.000E+00	---	CO2F
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	1024	---	---	NPTS
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	suppressed
2 -- inhalation (w/o radon)	suppressed
3 -- plant ingestion	suppressed
4 -- meat ingestion	suppressed
5 -- milk ingestion	suppressed
6 -- aquatic foods	active
7 -- drinking water	suppressed
8 -- soil ingestion	suppressed
9 -- radon	suppressed
Find peak pathway doses	active

Contaminated Zone Dimensions

Area: 131000.00 square meters
Thickness: 6.10 meters
Cover Depth: 0.00 meters

Initial Soil Concentrations, pCi/g

Am-241	1.700E-01
Co-60	6.690E-03
Cs-137	2.550E+00
Eu-152	1.500E-01
Eu-154	1.400E-02
Pu-238	3.190E-03
Pu-239	1.020E-01
Pu-241	9.110E-01
Sr-90	5.540E-02

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	7.810E+02	1.000E+03
TDOSE(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.711E-01	3.494E-01	4.812E-02	1.951E-02
M(t):	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.684E-02	1.397E-02	1.925E-03	7.804E-04

Maximum TDOSE(t): 6.864E-01 mrem/yr at t = 113.6 ± 0.2 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 = 1.136E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.136E+02 years
Water Dependent Pathways

Radio-Nuclide	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.
Am-241	0.000E+00	0.0000	6.301E-01	0.9179	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.301E-01	0.9179
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	6.441E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.441E-14	0.0000
Pu-241	0.000E+00	0.0000	5.633E-02	0.0821	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.633E-02	0.0821
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	6.864E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.864E-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 = 0.000E+00 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000

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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

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Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.

Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

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	0.000E+00	0.0000

*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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:32 Page 21
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.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 mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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-	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.
Am-241	0.000E+00	0.0000	6.663E-01	0.9929	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.663E-01	0.9929
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	3.543E-15	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.543E-15	0.0000
Pu-241	0.000E+00	0.0000	4.764E-03	0.0071	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.764E-03	0.0071
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Total	0.000E+00	0.0000	6.711E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.711E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:32 Page 22
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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 mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	2.922E-01	0.8364	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.922E-01	0.8364
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	3.501E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.501E-09	0.0000
Pu-239	0.000E+00	0.0000	5.719E-10	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.719E-10	0.0000
Pu-241	0.000E+00	0.0000	5.717E-02	0.1636	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.717E-02	0.1636
Sr-90	0.000E+00	0.0000	1.717E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.717E-06	0.0000
Total	0.000E+00	0.0000	3.494E-01	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.494E-01	1.0000

*Sum of all water independent and dependent pathways.

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:32 Page 23
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.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 = 7.810E+02 years
Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground mrem/yr	Ground fract.	Inhalation mrem/yr	Inhalation fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	Soil mrem/yr	Soil fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 7.810E+02 years
Water Dependent Pathways

Radio-Nuclide	Water mrem/yr	Water fract.	Fish mrem/yr	Fish fract.	Radon mrem/yr	Radon fract.	Plant mrem/yr	Plant fract.	Meat mrem/yr	Meat fract.	Milk mrem/yr	Milk fract.	All Pathways* mrem/yr	All Pathways* fract.
Am-241	0.000E+00	0.0000	4.024E-02	0.8363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.024E-02	0.8363
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000

Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	1.262E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.262E-08	0.0000
Pu-239	0.000E+00	0.0000	6.928E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.928E-09	0.0000
Pu-241	0.000E+00	0.0000	7.876E-03	0.1637	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.876E-03	0.1637
Sr-90	0.000E+00	0.0000	8.310E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.310E-12	0.0000
Total	0.000E+00	0.0000	4.812E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.812E-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-	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.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Sr-90	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
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	0.000E+00	0.0000

Total Dose 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*	
Nuclide	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	1.632E-02	0.8363	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.632E-02	0.8363
Co-60	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Cs-137	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-152	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Eu-154	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000
Pu-238	0.000E+00	0.0000	1.188E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.188E-08	0.0000
Pu-239	0.000E+00	0.0000	1.042E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.042E-08	0.0000
Pu-241	0.000E+00	0.0000	3.193E-03	0.1637	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.193E-03	0.1637
Sr-90	0.000E+00	0.0000	3.158E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.158E-14	0.0000
Total	0.000E+00	0.0000	1.951E-02	1.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.951E-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 (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	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.919E+00	1.719E+00	2.367E-01	9.596E-02
Am-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.438E-08	8.441E-06	1.447E-05	1.518E-05
Am-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.328E-14	4.954E-10	2.487E-09	3.215E-09
Am-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.244E-16	7.326E-13	9.792E-12	1.522E-11
Am-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.919E+00	1.719E+00	2.367E-01	9.598E-02
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137+D	Cs-137+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Gd-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-154	Eu-154	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	U-234	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.097E-06	3.581E-06	3.008E-06
Pu-238	Th-230	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.466E-12	1.843E-10	2.652E-10
Pu-238	Ra-226+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.257E-13	2.893E-08	5.458E-08
Pu-238	Pb-210+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.456E-07	6.613E-07
Pu-238	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.097E-06	3.956E-06	3.724E-06
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-239	U-235+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.053E-10	5.000E-09	6.474E-09
Pu-239	Pa-231	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.487E-10	3.312E-09	5.079E-09
Pu-239	Ac-227+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.473E-14	5.053E-09	5.961E-08	9.064E-08
Pu-239	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.473E-14	5.607E-09	6.792E-08	1.022E-07
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.230E-03	6.275E-02	8.645E-03	3.505E-03
Pu-241	Np-237+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.029E-11	2.589E-07	4.765E-07	4.998E-07
Pu-241	U-233	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.334E-18	1.361E-11	8.025E-11	1.048E-10
Pu-241	Th-229+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.313E-19	1.466E-14	3.095E-13	4.850E-13
Pu-241	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.230E-03	6.275E-02	8.645E-03	3.505E-03
Pu-241+D	Pu-241+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	Np-237+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241+D	U-233	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.811E-16	4.569E-15	6.009E-15
Pu-241+D	Th-229+D	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.981E-20	8.215E-18	1.583E-17
Pu-241+D	ΣDSR(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.811E-16	4.577E-15	6.025E-15

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	7.810E+02	1.000E+03
Sr-90+D	Sr-90+D	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.100E-05	1.500E-10	5.701E-13

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	*3.431E+12	6.378E+00	1.455E+01	1.056E+02	2.605E+02
Co-60	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15	*1.132E+15
Cs-137	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13	*8.704E+13
Eu-152	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14	*1.765E+14
Eu-154	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14	*2.639E+14
Pu-238	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	*1.712E+13	2.278E+07	4.719E+06	6.714E+06
Pu-239	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	*6.214E+10	4.458E+09	3.681E+09	2.446E+09
Pu-241	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	*1.030E+14	4.780E+03	3.984E+02	2.992E+03	7.133E+03
Sr-90	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	*1.365E+14	8.064E+09	1.667E+11	4.385E+13

*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 = 113.6 ± 0.2 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.700E-01	99.7 ± 0.2	3.923E+00	6.373E+00	3.706E+00	6.745E+00
Co-60	6.690E-03	0.000E+00	0.000E+00	*1.132E+15	0.000E+00	*1.132E+15
Cs-137	2.550E+00	0.000E+00	0.000E+00	*8.704E+13	0.000E+00	*8.704E+13
Eu-152	1.500E-01	0.000E+00	0.000E+00	*1.765E+14	0.000E+00	*1.765E+14
Eu-154	1.400E-02	0.000E+00	0.000E+00	*2.639E+14	0.000E+00	*2.639E+14
Pu-238	3.190E-03	648 ± 1	4.033E-06	6.200E+06	0.000E+00	*1.712E+13
Pu-239	1.020E-01	1.000E+03	1.022E-07	2.446E+08	6.315E-13	*6.214E+10
Pu-241	9.110E-01	156.4 ± 0.3	1.034E-01	2.419E+02	6.184E-02	4.043E+02
Sr-90	5.540E-02	152.8 ± 0.3	1.314E-03	1.903E+04	0.000E+00	*1.365E+14

*At specific activity limit

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	7.810E+02	1.000E+03

Am-241	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.663E-01	2.922E-01	4.024E-02	1.631E-02
Am-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.764E-03	5.717E-02	7.875E-03	3.193E-03
Am-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.711E-01	3.493E-01	4.812E-02	1.951E-02
Np-237	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.434E-08	1.435E-06	2.460E-06	2.580E-06
Np-237	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.314E-11	2.359E-07	4.341E-07	4.554E-07
Np-237	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Np-237	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.442E-08	1.671E-06	2.894E-06	3.035E-06
U-233	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.258E-15	8.421E-11	4.229E-10	5.465E-10
U-233	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.681E-18	1.240E-11	7.311E-11	9.550E-11
U-233	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.650E-16	4.162E-15	5.474E-15
U-233	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.265E-15	9.661E-11	4.960E-10	6.421E-10
Th-229	Am-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.115E-17	1.245E-13	1.665E-12	2.588E-12
Th-229	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.196E-19	1.336E-14	2.820E-13	4.418E-13
Th-229	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.804E-20	7.483E-18	1.442E-17
Th-229	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.127E-17	1.379E-13	1.947E-12	3.030E-12
Co-60	Co-60	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	7.208E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-152	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Gd-152	Eu-152	2.792E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Eu-154	Eu-154	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.840E-09	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-238	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-234	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.501E-09	1.142E-08	9.594E-09
Th-230	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.867E-15	5.879E-13	8.460E-13
Ra-226	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.039E-15	9.229E-11	1.741E-10
Pb-210	Pu-238	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.103E-09	2.109E-09
Pu-239	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
U-235	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	4.134E-11	5.100E-10	6.604E-10
Pa-231	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.517E-11	3.378E-10	5.181E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.543E-15	5.154E-10	6.080E-09	9.245E-09

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Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.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	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	Pu-241	2.450E-05	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Pu-241	ΣDOSE(j)		0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Sr-90	Sr-90	1.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.717E-16	8.310E-12	3.158E-14

THF(i) is the thread fraction of the parent nuclide.
RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:32 Page 29
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.rad

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Am-241	Am-241	1.000E+00	1.700E-01	1.693E-01	1.678E-01	1.629E-01	1.497E-01	1.112E-01	4.753E-02	6.160E-03	2.430E-03
Am-241	Pu-241	1.000E+00	0.000E+00	1.423E-03	4.055E-03	1.133E-02	2.144E-02	2.149E-02	9.302E-03	1.206E-03	4.755E-04
Am-241	ΣS(j):		1.700E-01	1.707E-01	1.719E-01	1.743E-01	1.711E-01	1.326E-01	5.683E-02	7.366E-03	2.905E-03
Np-237	Am-241	1.000E+00	0.000E+00	5.494E-08	1.641E-07	5.385E-07	1.546E-06	4.437E-06	8.995E-06	1.110E-05	1.088E-05
Np-237	Pu-241	1.000E+00	0.000E+00	2.325E-10	2.021E-09	1.997E-08	1.322E-07	6.500E-07	1.549E-06	1.980E-06	1.947E-06
Np-237	Pu-241	2.450E-05	0.000E+00	7.057E-12	2.019E-11	5.731E-11	1.143E-10	1.464E-10	1.417E-10	1.282E-10	1.225E-10
Np-237	ΣS(j):		0.000E+00	5.518E-08	1.661E-07	5.586E-07	1.678E-06	5.087E-06	1.054E-05	1.308E-05	1.283E-05
U-233	Am-241	1.000E+00	0.000E+00	1.202E-13	1.078E-12	1.182E-11	1.026E-10	1.005E-09	6.444E-09	2.137E-08	2.631E-08
U-233	Pu-241	1.000E+00	0.000E+00	3.403E-16	8.948E-15	3.028E-13	6.439E-12	1.231E-10	1.032E-09	3.715E-09	4.620E-09
U-233	Pu-241	2.450E-05	0.000E+00	1.555E-17	1.355E-16	1.349E-15	9.147E-15	4.941E-14	1.536E-13	3.128E-13	3.546E-13
U-233	ΣS(j):		0.000E+00	1.205E-13	1.087E-12	1.212E-11	1.090E-10	1.128E-09	7.476E-09	2.508E-08	3.093E-08
Th-229	Am-241	1.000E+00	0.000E+00	3.785E-18	1.019E-16	3.737E-15	9.813E-14	3.303E-12	6.878E-11	6.996E-10	1.175E-09
Th-229	Pu-241	1.000E+00	0.000E+00	8.056E-21	6.388E-19	7.333E-17	4.895E-15	3.486E-13	1.027E-11	1.178E-10	2.011E-10
Th-229	Pu-241	2.450E-05	0.000E+00	4.915E-22	1.295E-20	4.415E-19	9.600E-18	1.997E-16	2.140E-15	1.283E-14	1.942E-14
Th-229	ΣS(j):		0.000E+00	3.793E-18	1.026E-16	3.811E-15	1.030E-13	3.651E-12	7.905E-11	8.173E-10	1.377E-09
Co-60	Co-60	1.000E+00	6.690E-03	5.865E-03	4.508E-03	1.795E-03	1.292E-04	1.294E-08	4.845E-20	0.000E+00	0.000E+00
Cs-137	Cs-137	1.000E+00	2.550E+00	2.492E+00	2.379E+00	2.024E+00	1.275E+00	2.527E-01	2.482E-03	3.680E-08	2.329E-10
Eu-152	Eu-152	7.208E-01	1.081E-01	1.026E-01	9.249E-02	6.424E-02	2.268E-02	5.927E-04	1.781E-08	2.370E-19	2.648E-24
Eu-152	Eu-152	2.792E-01	4.188E-02	3.976E-02	3.582E-02	2.488E-02	8.784E-03	2.296E-04	6.898E-09	9.180E-20	1.026E-24
Eu-152	ΣS(j):		1.500E-01	1.424E-01	1.283E-01	8.912E-02	3.146E-02	8.222E-04	2.471E-08	3.288E-19	3.674E-24
Gd-152	Eu-152	2.792E-01	0.000E+00	2.619E-16	7.465E-16	2.095E-15	4.075E-15	5.107E-15	5.070E-15	4.915E-15	4.845E-15
Eu-154	Eu-154	1.000E+00	1.400E-02	1.294E-02	1.105E-02	6.365E-03	1.315E-03	5.279E-06	7.504E-13	2.557E-29	8.130E-37
Pu-238	Pu-238	1.840E-09	5.870E-12	5.823E-12	5.732E-12	5.422E-12	4.627E-12	2.657E-12	5.443E-13	1.202E-14	2.119E-15
Pu-238	Pu-238	1.000E+00	3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	2.958E-04	6.534E-06	1.152E-06
Pu-238	ΣS(j):		3.190E-03	3.165E-03	3.115E-03	2.947E-03	2.515E-03	1.444E-03	2.958E-04	6.534E-06	1.152E-06
U-234	Pu-238	1.000E+00	0.000E+00	9.003E-09	2.677E-08	8.648E-08	2.375E-07	5.882E-07	8.352E-07	5.707E-07	4.535E-07
Th-230	Pu-238	1.000E+00	0.000E+00	4.058E-14	3.631E-13	3.951E-12	3.353E-11	3.060E-10	1.687E-09	4.778E-09	5.772E-09
Ra-226	Pu-238	1.000E+00	0.000E+00	5.863E-18	1.575E-16	5.731E-15	1.472E-13	4.599E-12	7.994E-11	5.973E-10	9.038E-10
Pb-210	Pu-238	1.000E+00	0.000E+00	4.530E-20	3.608E-18	4.206E-16	2.909E-14	2.194E-12	6.136E-11	5.457E-10	8.445E-10
Pu-239	Pu-239	1.000E+00	1.020E-01	1.020E-01	1.020E-01	1.019E-01	1.018E-01	1.014E-01	1.003E-01	9.768E-02	9.650E-02
U-235	Pu-239	1.000E+00	0.000E+00	1.004E-10	3.009E-10	9.990E-10	2.964E-09	9.503E-09	2.558E-08	5.201E-08	5.988E-08
Pa-231	Pu-239	1.000E+00	0.000E+00	1.062E-15	9.544E-15	1.055E-13	9.357E-13	9.878E-12	7.694E-11	5.720E-10	5.255E-10
Ac-227	Pu-239	1.000E+00	0.000E+00	1.117E-17	2.963E-16	1.031E-14	2.355E-13	5.376E-12	5.964E-11	3.249E-10	4.665E-10

RESRAD, Version 6.3 T½ Limit = 180 days 06/28/2006 09:32 Page 30
Summary : Combined Upper Areas and Filter Bed Areas Resident Farmer (aquatic food only)
File : combined_upper_areas_and_filter_bed_areas_aquatic.rad

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	7.810E+02	1.000E+03
Pu-241	Pu-241	1.000E+00	9.110E-01	8.681E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	4.837E-07	4.205E-17	1.104E-21
Pu-241	Pu-241	2.450E-05	2.232E-05	2.127E-05	1.932E-05	1.379E-05	5.262E-06	1.807E-07	1.185E-11	1.030E-21	2.705E-26
Pu-241	ΣS(j):		9.110E-01	8.682E-01	7.884E-01	5.628E-01	2.148E-01	7.377E-03	4.837E-07	4.205E-17	1.104E-21

Sr-90	Sr-90	1.000E+00	5.540E-02	5.400E-02	5.131E-02	4.290E-02	2.572E-02	4.295E-03	2.582E-05	1.176E-10	4.347E-13

THF(i) is the thread fraction of the parent nuclide.
RESCALC.EXE execution time = 798.01 seconds
Total water/soil iteration failures = 2.807E+03.

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FedEx PRIORITY OVERNIGHT TUE

emp: 539261 17JUL06

Deliver By: 18JUL06 A2

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Tape

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Recipient's Copy

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Date 7/17/06 FedEx Tracking Number 854606723670

Sender's Name Joe Jacobs Phone 614 427-4048

Company BATTELLE COLUMBUS LABS

Address 1429 STATE ROUTE 142 NE Dept./Floor/Suite/Room

City WEST JEFFERSON State OH ZIP 43162

2 Your Internal Billing Reference

3 To Recipient's Name Mike McCurm Phone 630 829-9856

Company US NRC Region III

Recipient's Address 2443 Warrenville Rd Suite 210

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room

Address

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4a Express Package Service — Packages up to 150 lbs.

- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate. * To most locations.

4b Express Freight Service — Packages over 150 lbs.

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation: ** To most locations.

5 Packaging

- [ ] FedEx Envelope†
- [x] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

† Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain Recip. Acct. No. [ ]

[redacted]

Total Packages	Total Weight		Total Charges
1	5-10 lbs.	[redacted]	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 NEW Residential Delivery Signature Options — If you require a signature, check Direct or Indirect.

- [x] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

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