Addendum to the Final Completion Report Former Hazardous Waste Management Facility Perimeter Area Soil Remediation

February 26, 2015

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Table of Contents

A) PURPOSE

The purpose of this addendum to the ***Completion Report for the Former Hazardous Waste Management Facility Perimeter Area Soil Remediation*** (PWGC, April 2010) is to document the cleanup of approximately 3.4 acres southeast of the Former Hazardous Waste Management Facility (FHWMF), designated Phase 3 of the FHWMF Perimeter Area (PA) which completes the required cleanup efforts associated with the FHWMF AOC 1 Sub AOC 1J. The Phase 3 area is shown in **Figure 1**. Remedial activities were performed in accordance with ***Closeout Procedures at National Priority List Sites, OSWER Directive 9320.2-09A-P*** (EPA, 2000) and include:

- The excavation of contaminated soil above site cleanup goals;
- The completion of a final status survey (FSS) and sampling, including Oak Ridge Institute for Science and Education (ORISE) independent verification (IV) ;
- The post closure dose assessment in accordance with the Residual Radioactivity Computer Code (RESRAD);
- The characterization, transportation and disposal of excavated soil at Energy Solutions Disposal Facility of Clive, Utah; and
- The implementation of institutional controls.

Remedial activities were performed by Brookhaven National Laboratory (BNL) Environmental Protection Division (EPD), EPD task order subcontractors and the BNL Radiological Control Division (RCD). Independent verification was performed by ORISE.

Work was performed in accordance with the ***Record of Decision, Operable Unit I and Radiologically Contaminated Soils*** (August 1999), the ***Final Action Memorandum, Removal Action for Contaminated Soil from the Former Hazardous Waste Management Facility Perimeter Area*** (June, 2009) and the ***Addendum to the Field Sampling Plan Former Hazardous Waste Management Facility Perimeter Area – Phase 3*** (PWGC, February 2014).

The U.S. Department of Energy (DOE) will maintain institutional controls for the subject area in accordance with Section 7.0 of the Completion Report (PWGC 2010). These institutional controls include the following:

- No soils may be removed from the area without release through BNL Radiological Control Division (RCD).
- All disturbed soils will remain within the area from which they were disturbed.

- The Land Use and Institutional Controls Factsheet that is available on the BNL website will be updated to reflect the completion of the Phase 3 cleanup activities and identification of the institutional controls.

B) AREA DESCRIPTION AND BACKGROUND

The section of the FHWMF PA addressed by this addendum consists of an approximately 3.4 acre, partially wooded parcel southeast of the FHWMF, as shown on **Figure 1**. Phase 3 includes a series of 13 grids in a main area (grids A1 to A4, B1 to B4, C1 to C3, and D1 to D2) with numerous areas of elevated activity, and two grids E1 and E2 which contain 3 small discrete areas of elevated activity, as shown on **Figure 2**.

Photograph 1 – Phase 3 Project area, view to southeast

The FHWMF Perimeter Area was partially characterized and remediated in 2009. Eleven discrete areas and an 18,750 ft^2 contiguous area of radiological soil contamination were remediated to meet OU I cleanup goals as specified by the ***Final Record of Decision for Area of Concern 31 High Flux Beam Reactor*** (BNL, February 2009) (HFBR ROD). This work, referred to as the FHWMF Perimeter Area Project, was performed as a non-time-critical removal action authorized by the ***Final Action Memorandum, Removal Action for Contaminated Soil from the Former Hazardous Waste Management Facility Perimeter Area*** (BNL, June 2009) and is documented by the ***Completion Report for the Former Hazardous Waste Management Facility Perimeter Area Soil Remediation*** (PWGC, April 2010). Additional discrete areas of elevated radioactivity that were considered to be outside of the scope of this effort were detected in 2009. The additional discrete areas that were located within the 11-acre parcel of the Long Island Solar Farm

(LISF) Project area were further characterized and remediated by the BNL EPD in support of authorizing construction of the LISF Project. These discrete areas were collectively known as Phase 2 and the work documented in the ***Addendum to the Former Hazardous Waste Management Facility Perimeter Area Completion Report*** (PWGC, December 2010). Discrete areas of soil contamination that were outside of the LISF Project area are being addressed as Phase 3, which will complete the FHWMF PA remedial effort.

C) CHARACTERIZATION AND REMEDIAL ACTIVITIES

In the spring of 2011, BNL EPD directed BNL Radiological Controls Technicians (RCTs) to perform radiological surveys in the Former HWMF Phase 3 area **Figure 1**. Based on the walkover surveys, it was determined that additional radiological contamination of surface soil was present.

The walkover survey was performed in approximately 10,000 ft^2 grids, as shown in **Figure 1**. The survey was performed using an unshielded 2" x 2" NaI scintillation detector (Eberline Model SSPA 3) coupled to a count rate meter (Ludlum Model 2221) and a PRO XR Satellite Receiver Trimble model TSCe Data Logger. The RCT followed 1 meter-wide lanes over each grid. The grids were cleared of underbrush and obstacles (fallen trees) before surveying.

In general the radiological surveys indicated that grids A1, B1, B2, and C2 contained areas of elevated activity over large portions of their surface area. These areas were discreet and non-contiguous. The remaining grids also contained discrete areas of elevated activity. Results of the walkover surveys are provided on **Figure 2**.

Photograph 2 – Remediation of the Phase 3 Area

Locations where radiological survey results were greater than 21,500 cpm (established field screening limit for Cs-137 of approximately 15 pCi/g using an unshielded NaI scintillation detector), as per Appendix B of the FHWMF FSP (2009), were marked and

surveyed with a global positioning system (GPS). Other radionuclides, if present, are expected to be collocated with Cs-137.

Excavation of the Former HWMF PA Phase 3 area was performed between August and September, 2014 using a combination of hand tools and small excavation equipment depending on the size of the area requiring excavation. Excavation in all areas proceeded in approximately one-foot lifts until radiological surveys showed concentrations were less than 21,500 cpm. A total of 99 cubic yards of soil were excavated.

Excavated soil was packaged into Lift Liners™, which is a soft sided packaging system consisting of an outer and inner woven polypropylene package with a 24,000 pound capacity.

D) FINAL STATUS SURVEY

After completion of remediation of the Former HWMF Phase 3 areas, walkover surveys were performed and soil samples were collected and analyzed, as specified below.

The primary radionuclides of concern, based on exposure potential, were Cs-137, Sr-90, and Ra-226. Although less likely to be present, certain other radionuclides were evaluated, including gamma emitters (e.g. Co-60, Eu-152, Eu-154), uranium isotopes, and plutonium isotopes. The chemical contaminants of concern, identified in the OU 1 ROD, were mercury and lead. These metals were also evaluated.

Photograph 3 – Loading Excavated Soil into a Lift Liner™

Final Status Survey Design

As discussed in Section C, discrete areas of contamination were remediated and surveyed in accordance with the ***Addendum to the Field Sampling Plan for Former Hazardous Waste Management Facility Perimeter Area – Phase 3*** (PWGC, February 2014). In addition to radiological surveys following the removal of each discrete area of contamination, the established grids were resurveyed as part of the FSS.

The addendum to the FSP identified four survey units (SUs):

- SU A = Grids A1, A2, A3, A4
- SU B = Grids B1, B2, B3, B4
- SU C = Grids C1, C2, C3
- SU D = Grids D1, D2

A 100% gamma walkover scan was performed over the four SUs. In grids E1 and E2 a focused walkover survey with an approximate radius of 10 feet beyond the edge of the three excavated areas was performed. The surveys were performed using a unshielded 2" x 2" NaI scintillation detector (Eberline Model SSPA 3) coupled to a count rate meter (Ludlum Model 2221) and a PRO XR Satellite Receiver Trimble model TSCe Data Logger. A 100% scan was defined as walking at 0.5 meters/sec and moving the probe in a serpentine motion. The technician followed 1 meter-wide lanes over each entire survey unit.

Photograph 4 – Final Status Survey

A minimum of 20 grab end-point soil samples and 2 composite soil samples were

collected from each SU. A systematic triangular grid was distributed across each SU using a random starting point to select the sampling locations. Sampling locations are provided in **Figure 3**. Grab and composite samples from each SU were analyzed for gamma spectroscopy; composite samples were also analyzed for Sr-90, Pu-238/239/240/241, U-235/238, lead and mercury. Samples were submitted for analysis to GEL Laboratories of Charleston, South Carolina (GEL). One-minute fixed-count measurements were taken with the NaI probe at each of the sampling locations. Soil samples were collected in accordance with BNL EM standard operating procedures.

Final Status Survey and Sampling Results

The results of the final status radiological walkover survey for the SU areas, and the three discrete areas in grids E1 and E2, exhibited count rates below 21,500 cpm, as shown in **Figure 4**. As specified in Appendix B of the ***Field Sampling Plan for the Former HWMF Perimeter Area*** (BNL, August 2009), the 21,500 cpm count rate was determined to approximate a Cs-137 concentration of 15 pCi/g in soil when using the unshielded NaI gamma scintillation detector.

In addition, individual 1-minute fixed-count measurements were taken with the NaI probe at each of the sampling locations. The results ranged from 6,030 to 12,255 cpm. A total of 88 soil samples and 9 composite samples were collected from the four SUs. All results were below site cleanup criteria for Cs-137 with concentrations ranging from below detection limits to 7.4 pCi/g. Ra-226, Sr-90, and U-238 were all reported at concentrations below their established cleanup goals of 5 pCi/g, 15 pCi/g, and 9 pCi/g, respectively. Ra-226 concentrations ranged from 0.402 to 0.859 pCi/g. Composite samples showed Sr-90 concentrations from below detection limits to 1.58 pCi/g and U-238 concentrations from below detection limits to 1.16 pCi/g. FSS soil sample results are provided in **Table 1**.

In order to determine an average value for use in post remediation dose assessment, all the radiological soil sample data were averaged. Table 1 provides averages of Cs-137, Ra-226, Sr-90, and U-238 by SU and averages used for RESRAD are provided in **Table 2**.

Chemical results for composite soil samples analyzed for mercury and lead indicated that residual soil concentrations for these contaminants are within their respective cleanup goals established in the OU 1 ROD. Results for chemical contaminants are summarized in **Table 3**.

Post Remediation Dose Assessment

A dose assessment was conducted to evaluate radiological dose impacts from the remaining residual radioactive materials using RESRAD, Version 7.0 (ANL, 2014). The average concentration for each radionuclide was used as input to the model in order to determine the projected dose. RESRAD input parameters are summarized in Appendix C.

As anticipated, Ra-226 was not detected above cleanup goals during these characterization efforts; however, it is included in the dose assessment as it is specified as a radionuclide of concern in the OU I ROD. The cleanup value of 5 pCi/g was selected for Ra-226 based on

DOE Order 458.1, Radiation Protection of the Public and the Environment. The average Ra-226 background concentration on BNL property had previously been established at approximately 0.56 pCi/g (CDM, 1996). Therefore, the average Ra-226 value of 0.65 pCi/g from the FHWMF Perimeter Area is consistent with typical background levels. When performing the post-remediation dose assessment using RESRAD, the background subtracted Ra-226 value of 0.09 pCi/g is used (0.65 pCi/g - 0.56pCi/g). In addition, the value of 0.65 pCi/g Ra-226 was also calculated as a conservative comparison.

The average concentrations of radionuclides were used in the RESRAD evaluation as follows:

- Cs-137: 1.33 pCi/g
- Ra-226: 0.09 pCi/g (also run with no background subtract: 0.65 pCi/g)
- Sr-90: 0.33 pCi/g
- U-238: 0.64 pCi/g

Two potential radiological dose scenarios were evaluated following remediation. The first assessment considered the radiation dose to a hypothetical future resident (non-farmer) assuming 50 years of institutional control. The second assessment considers the radiation dose to a current industrial worker (no decay). The parameters and pathways used in the dose assessment for the former HWMF Perimeter Area were used for this dose assessment, and the RESRAD summary reports are included as Appendix A.

The results of the dose assessment are shown in **Table 4**. The maximum projected dose to a resident non-farmer at ≥ year 50 is 2.8 mrem/year and this is below the dose objective of 15 mrem/year. For an industrial worker with no decay time, the maximum projected dose to an industrial worker at ≥ year 0 is 1.1 mrem/year, also less than 15 mrem/year. The results also indicate that the NYSDEC DER-38 guideline of 10 mrem/yr would also be met under each of the two scenarios described above. If background was not subtracted for Ra-226 (use 0.65 pCi/g without background subtracted), then the residential and industrial doses would be 11 mrem/yr and 2.2 mrem/yr, respectively.

Final Status Survey Conclusions

As indicated above, results of the FSS following the completion of remediation within the Phase 3 project area demonstrates conformance to the site cleanup goals established for the project.

Final Status Survey Independent Verification

The Type A Independent Verification (IV) of the FHWMF Phase 3 was performed by ORISE. ORISE concluded that the remediation was sufficient to satisfy the cleanup goals specified for the project.

The results of the IV are documented in the ***Project-Specific Type A Verification for Phase 3 of the Former Hazardous Waste Management Facility Perimeter Area Soil Remediation***, (DCN: 5098-LT-02-0, ORISE, February 26, 2015), provided in Appendix B.

E) WASTE MANAGEMENT

Waste characterization, packaging, handling, and storage were performed in accordance with BNL Subject Base Management System (SBMS) waste management procedures. A total of approximately 99 cubic yards of excavated soil contaminated above cleanup goals, classified as low-level radioactive waste (LLRW), were placed into 16 Lift Liners™.

Waste verification sampling was performed for disposal and the samples were analyzed by GEL for comparison to Energy Solution's waste acceptance criteria (WAC). Waste verification samples were analyzed for Strontium-90, Uranium-235/238, Plutonium-238/239/240/241, Polychlorinated Biphenyls, mercury, lead, Gamma Spectroscopy and Full TCLP. According to waste characterization results, the waste shipped met the WAC of Energy Solutions of Clive, Utah. Waste verification results were submitted to BNL's Waste Management Division.

The Lift Liners™ were placed in low sided gondolas and transported by rail to Energy Solutions of Clive, Utah on October 17, 2014.

Photograph 5 – Loading Low-Sided Gondola Railcars for shipment to Energy Solutions of Utah

The railcars were received at the disposal facility on November 7, 2014.

Waste minimization and pollution prevention methods employed during characterization and remedial activities included excavation in as small a lift as possible, using hand tools

instead of heavy equipment when possible to minimize excavation of soil below cleanup goals and judicious use of consumables (e.g., PPE).

F) SUMMARY OF PROJECT COSTS

The characterization and remediation of soils within Phase 3 of the FHWMF PA cost approximately $710,500 to complete. The clean-up costs included the following details:

Engineering and Planning	$ 40,000
Characterization and Remediation	$ 415,000
Waste Transportation & Disposal	$ 245,000
ORISE IV	$ 10,500
Total Cost	$ 710,500

G) LESSONS LEARNED

The following is a summary of the lessons learned from this project and corrective actions, if applicable, for future projects:

- Completion of a 100% pre-excavation walkover survey was important to identification of areas above the screening level of 21,500 cpm and allowing for identification of excavation methods capable of minimizing waste volumes.
- Diligent debris removal (deadfall) aided in overall project safety for the RCTs conducting the Final Status Survey, as well as increasing the survey efficiency and accuracy.

H) REFERENCES

BNL, 1999, *Record of Decision, Operable Unit I and Radiologically Contaminated Soils,* August 1999.

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DOE Order 458.1, *Radiation Protection of the Public and the Environment*

EPA, 2000. *Closeout Procedures at National Priority List Sites, OSWER Directive 9320.2-09A-P, 2000.*

NYSDEC, 2013. *Cleanup Guidance for Soils Contaminated with Radioactive Materials (DER-38)*, April 230, 2013.

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PWGC, 2010. *Addendum to the Former Hazardous Waste Management Facility Perimeter Area Completion Report, December 2010.*

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ORISE, 2015. *Project-Specific Type A Verification for Phase 3 of the Former Hazardous Waste Management Facility Perimeter Area Soil Remediation*, (DCN: 5098-LT-02-0), February 26, 2015.

FIGURES

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SURVEY GRID

FHWMF PERIMETER AREA - PHASE 3
BROOKHAVEN NATIONAL LABORATORY

0 75 150 225 300 Feet

Project:	BNL1402
Date:	11/12/2014
Designed by:	BB
Drawn by:	BB
Approved by:	AL
Figure No:	1

Gamma Count Rate - Uncollimated (CPM)

- <15,000
- ≥15,000 - 21,499
- ≥21,500
- Survey Units

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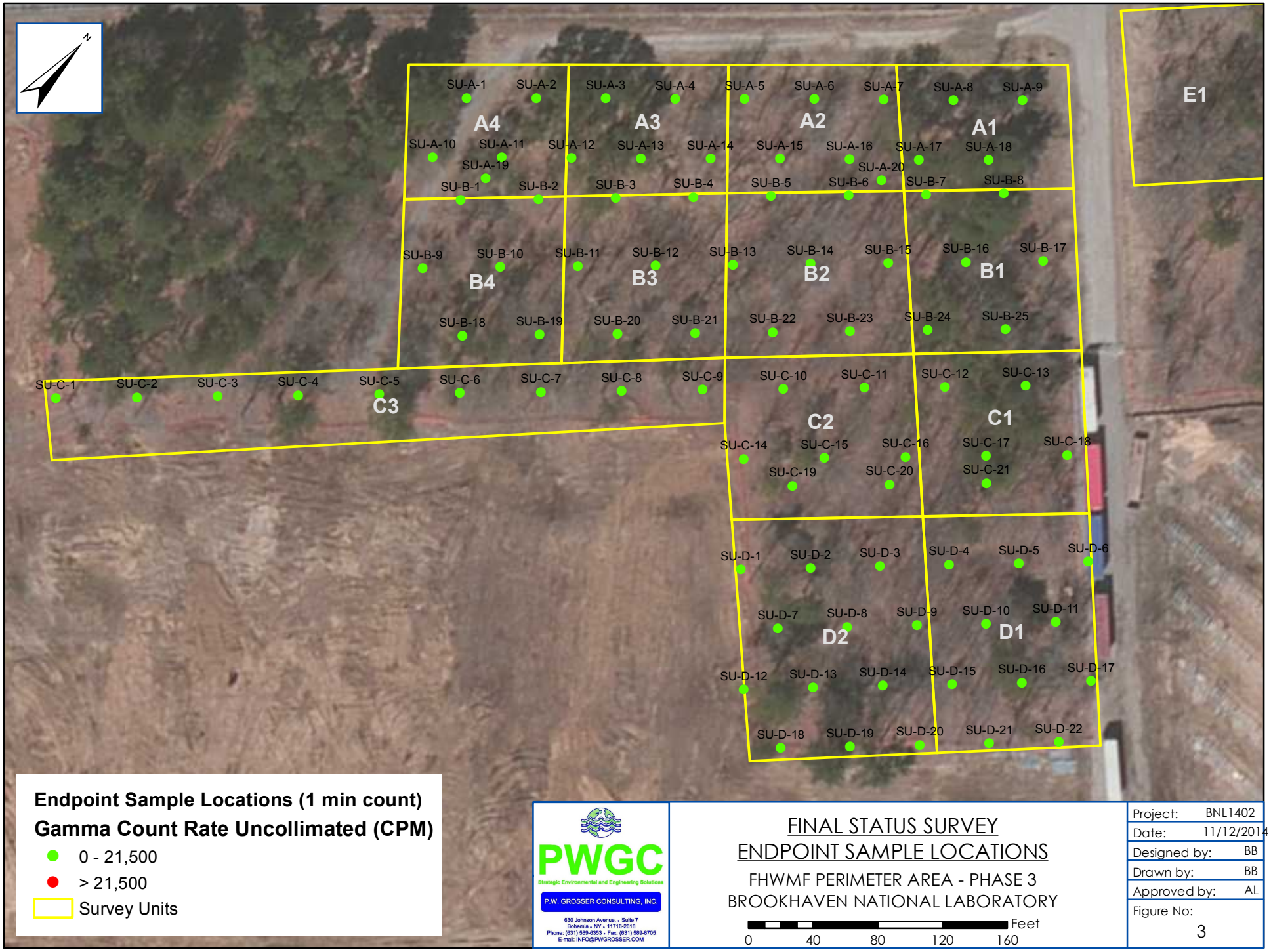
GPS BASED RADILOGICAL SURVEY AS OF MAY 31, 2011

FHWMF PERIMETER AREA - PHASE 3
BROOKHAVEN NATIONAL LABORATORY

0 75 150 225 300 Feet

Project:	BNL1402
Date:	11/12/2014
Designed by:	BB
Drawn by:	BB
Approved by:	AL
Figure No:	2


N
E1
A4
A3
A2
A1
B4
B3
B2
B1
C3
C2
C1
D2
D1
SU-A-1 SU-A-2 SU-A-3 SU-A-4 SU-A-5 SU-A-6 SU-A-7 SU-A-8 SU-A-9
SU-A-10 SU-A-11 SU-A-12 SU-A-13 SU-A-14 SU-A-15 SU-A-16 SU-A-17 SU-A-18
SU-A-19 SU-A-20
SU-B-1 SU-B-2 SU-B-3 SU-B-4 SU-B-5 SU-B-6 SU-B-7 SU-B-8
SU-B-9 SU-B-10 SU-B-11 SU-B-12 SU-B-13 SU-B-14 SU-B-15 SU-B-16 SU-B-17
SU-B-18 SU-B-19 SU-B-20 SU-B-21 SU-B-22 SU-B-23 SU-B-24 SU-B-25
SU-C-1 SU-C-2 SU-C-3 SU-C-4 SU-C-5 SU-C-6 SU-C-7 SU-C-8 SU-C-9
SU-C-10 SU-C-11 SU-C-12 SU-C-13
SU-C-14 SU-C-15 SU-C-16 SU-C-17 SU-C-18
SU-C-19 SU-C-20 SU-C-21
SU-D-1 SU-D-2 SU-D-3 SU-D-4 SU-D-5 SU-D-6
SU-D-7 SU-D-8 SU-D-9 SU-D-10 SU-D-11
SU-D-12 SU-D-13 SU-D-14 SU-D-15 SU-D-16 SU-D-17
SU-D-18 SU-D-19 SU-D-20 SU-D-21 SU-D-22
Endpoint Sample Locations (1 min count)
Gamma Count Rate Uncollimated (CPM)
0 - 21,500
> 21,500
Survey Units
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FINAL STATUS SURVEY
ENDPOINT SAMPLE LOCATIONS
FHWMF PERIMETER AREA - PHASE 3
BROOKHAVEN NATIONAL LABORATORY
0 40 80 120 160 Feet
Project: BNL1402
Date: 11/12/2014
Designed by: BB
Drawn by: BB
Approved by: AL
Figure No: 3

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FINAL STATUS SURVEY

FHWMF PERIMETER AREA - PHASE 3
BROOKHAVEN NATIONAL LABORATORY

0 75 150 225 300 Feet

Project:	BNL1402
Date:	11/12/2014
Designed by:	BB
Drawn by:	BB
Approved by:	AL
Figure No:	4

TABLES

Table 1
Brokhaven National Laboratory
FHWMF Perimeter Area - Phase 3
Final Status Survey - Endpoint Sample Locations

Survey Unit A										
Sample Name		Northing	Easting	Gamma County Rate Uncollimated (CPM)	Cesium 137 (pCi/g)		Radium 226 (pCi/g)		Strontium 90 (pCi/g)	Uranium 238 (pCi/g)
					Grab Samples	Composite Samples	Grab Samples	Composite Samples	Composite Samples	Composite Samples
SU-A-1	Composite Sample 1	254,430.319290	1,300,194.117484	6,030	0.227	3.45	0.435	0.676	1.58 J	0.615 J
SU-A-2		254,459.503217	1,300,225.697516	9,758	3.73		0.749			
SU-A-3		254,488.687143	1,300,257.277548	9,074	4.28		0.503			
SU-A-4		254,517.871070	1,300,288.857580	10,275	2.98		0.628			
SU-A-5		254,547.054996	1,300,320.437613	10,812	4.61		0.679			
SU-A-6		254,576.238923	1,300,352.017645	8,517	2.14		0.538			
SU-A-7		254,605.422849	1,300,383.597677	8,454	1.44		0.578			
SU-A-8		254,634.606776	1,300,415.177709	9,335	2.74		0.402			
SU-A-9		254,663.790702	1,300,446.757742	8,775	1.16		0.592			
SU-A-10		254,388.893159	1,300,203.806428	6,702	0.492		0.435			
SU-A-11	Composite Sample 2	254,418.077085	1,300,235.386460	8,148	0.325	1.22	0.754	0.711	-0.159 U	0.468 J
SU-A-12		254,447.261012	1,300,266.966493	8,679	0.387		0.703			
SU-A-13		254,476.444938	1,300,298.546525	9,367	2.29		0.656			
SU-A-14		254,505.628865	1,300,330.126557	11,549	6.56		0.570			
SU-A-15		254,534.812791	1,300,361.706589	8,822	1.06		0.688			
SU-A-16		254,563.996718	1,300,393.286621	8,006	0.825		0.519			
SU-A-17		254,593.180644	1,300,424.866654	8,315	0.665		0.706			
SU-A-18		254,622.364571	1,300,456.446686	8,021	0.293		0.726			
SU-A-19		254,401.742674	1,300,236.865314	8,162	0.134		0.762			
SU-A-20		254,568.023185	1,300,416.798056	7,872	0.745		0.596			
				Average Result SU A	**1.85**	**2.34**	**0.61**	**0.69**	**0.71**	**0.54**

Notes:

U - Analyte was analyzed for, but not detected above the MDL, MDA, LOD.

J - Value is estimated.

Denotes random start point

SU-A dimensions are 400'x75'

Coordintates in State Plane Long Island Survey Feet

L= 48' (N-S distance between points)

0.866 L= 42' (E-W distance between points)

Table 1
Brokhaven National Laboratory
FHWMF Perimeter Area - Phase 3
Final Status Survey - Endpoint Sample Locations

Survey Unit B										
Sample Name		Northing	Easting	Gamma County Rate Uncollimated (CPM)	Cesium 137 (pCi/g)		Radium 226 (pCi/g)		Strontium 90 (pCi/g)	Uranium 238 (pCi/g)
					Grab Samples	Composite Samples	Grab Samples	Composite Samples	Composite Samples	Composite Samples
SU-B-1	Composite Sample 3	254,381.569647	1,300,234.540151	8,661	1.50	1.23	0.617	0.72	0.422 U	0.924
SU-B-2		254,414.707406	1,300,269.266062	9,423	0.188		0.633			
SU-B-3		254,447.845165	1,300,303.991974	9,891	3.09		0.637			
SU-B-4		254,480.982924	1,300,338.717886	12,255	7.40		0.617			
SU-B-5		254,514.120682	1,300,373.443798	8,432	2.07		0.584			
SU-B-6		254,547.258441	1,300,408.169709	8,122	1.01		0.666			
SU-B-7		254,580.396200	1,300,442.895621	7,897	1.13		0.699			
SU-B-8		254,613.533959	1,300,477.621533	8,422	2.48		0.557			
SU-B-9		254,334.615595	1,300,246.172734	7,015	1.14		0.654			
SU-B-10		254,367.753354	1,300,280.898645	9,389	1.34		0.643			
SU-B-11	Composite Sample 4	254,400.891113	1,300,315.624557	9,458	0.198	0.796	0.717	0.7	0.0119 U	0.677 J
SU-B-12		254,434.028872	1,300,350.350469	8,924	3.32		0.676			
SU-B-13		254,467.166630	1,300,385.076381	8,518	1.79		0.49			
SU-B-14		254,500.304389	1,300,419.802292	9,419	4.55		0.686			
SU-B-15		254,533.442148	1,300,454.528204	8,200	0.708		0.815			
SU-B-16		254,566.579907	1,300,489.254116	7,823	1.93		0.59			
SU-B-17		254,599.717665	1,300,523.980027	8,733	1.52		0.533			
SU-B-18		254,320.799302	1,300,292.531229	8,665	0.595		0.781			
SU-B-19		254,353.937061	1,300,327.257140	8,183	0.641		0.67			
SU-B-20		254,387.074819	1,300,361.983052	8,570	2.05		0.633			
SU-B-21	Composite Sample 5	254,420.212578	1,300,396.708964	8,367	1.23	0.904	0.713	0.539	0.204 U	1.16
SU-B-22		254,453.350337	1,300,431.434875	8,383	3.24		0.546			
SU-B-23		254,486.488096	1,300,466.160787	8,551	2.28		0.513			
SU-B-24		254,519.625854	1,300,500.886699	7,821	1.08		0.525			
SU-B-25		254,552.763613	1,300,535.612610	8,723	0.318		0.706			
				Average Result SU B	**1.30**	**0.98**	**0.51**	**0.65**	**0.21**	**0.92**

Notes:

U - Analyte was analyzed for, but not detected above the MDL, MDA, LOD.

J - Value is estimated.

Denotes random start point

SU-B dimensions are 410'x100'

Coordintates in State Plane Long Island Survey Feet

L= 48' (N-S distance between points)

0.866 L= 42' (E-W distance between points)

Table 1
Brokhaven National Laboratory
FHWMF Perimeter Area - Phase 3
Final Status Survey - Endpoint Sample Locations

Survey Unit C										
Sample Name		Northing	Easting	Gamma County Rate Uncollimated (CPM)	Cesium 137 (pCi/g)		Radium 226 (pCi/g)		Strontium 90 (pCi/g)	Uranium 238 (pCi/g)
					Grab Samples	Composite Samples	Grab Samples	Composite Samples	Composite Samples	Composite Samples
SU-C-1	Composite Sample 6	254,121.089233	1,300,135.114273	6,211	0.071 J	0.449	0.560	0.648	-0.164 U	0.706 J
SU-C-2		254,155.657766	1,300,171.239286	7,348	1.34		0.618			
SU-C-3		254,190.226299	1,300,207.364299	7,659	0.289		0.706			
SU-C-4		254,224.794832	1,300,243.489311	6,044	0.395		0.707			
SU-C-5		254,259.363364	1,300,279.614324	8,039	1.67		0.64			
SU-C-6		254,293.931897	1,300,315.739337	8,411	1.46		0.732			
SU-C-7		254,328.500430	1,300,351.864349	8,239	0.144		0.681			
SU-C-8		254,363.068963	1,300,387.989362	8,683	2.06		0.728			
SU-C-9		254,397.637496	1,300,424.114375	8,000	0.923		0.565			
SU-C-10		254,432.206028	1,300,460.239387	8,828	0.818		0.795			
SU-C-11		254,466.774561	1,300,496.364400	9,794	1.08		0.724			
SU-C-12	Composite Sample 7	254,501.343094	1,300,532.489413	7,681	0.440	0.309	0.576	0.581	0.0937 U	0.232 U
SU-C-13		254,535.911627	1,300,568.614425	8,252	0.109		0.743			
SU-C-14		254,383.854251	1,300,471.905819	8,376	1.22		0.659			
SU-C-15		254,418.422784	1,300,508.030832	7,972	0.167		0.715			
SU-C-16		254,452.991317	1,300,544.155845	8,120	0.159		0.675			
SU-C-17		254,487.559849	1,300,580.280857	7,990	0.647		0.809			
SU-C-18		254,522.128382	1,300,616.405870	7,203	1.10		0.626			
SU-C-19		254,392.312866	1,300,505.334128	7,320	0.0169 U		0.714			
SU-C-20		254,433.795106	1,300,548.684143	8,028	0.461		0.788			
SU-C-21		254,475.277345	1,300,592.034158	7,724	1.29		0.675			
				Average Result SU C	**0.75**	**0.38**	**0.66**	**0.61**	**-0.035**	**0.47**

Notes:

U - Analyte was analyzed for, but not detected above the MDL, MDA, LOD.

J - Value is estimated.

Denotes random start point

SU-C dimensions are irregular

Coordintates in State Plane Long Island Survey Feet

L= 48' (N-S distance between points)

0.866 L= 42' (E-W distance between points)

Table 1
Brokhaven National Laboratory
FHWMF Perimeter Area - Phase 3
Final Status Survey - Endpoint Sample Locations

Survey Unit D										
Sample Name		Northing	Easting	Gamma County Rate Uncollimated (CPM)	Cesium 137 (pCi/g)		Radium 226 (pCi/g)		Strontium 90 (pCi/g)	Uranium 238 (pCi/g)
					Grab Samples	Composite Samples	Grab Samples	Composite Samples	Composite Samples	Composite Samples
SU-D-1	Composite Sample 8	254,332.539527	1,300,517.284267	7,665	0.256	0.406	0.744	0.635	0.508 U	0.638 J
SU-D-2		254,362.586372	1,300,548.044421	8,167	0.789		0.668			
SU-D-3		254,392.633218	1,300,578.804575	7,658	0.271		0.841			
SU-D-4		254,422.680063	1,300,609.564729	7,831	0.640		0.596			
SU-D-5		254,452.726909	1,300,640.324883	7,837	0.397		0.643			
SU-D-6		254,482.773754	1,300,671.085037	6,358	0.325		0.56			
SU-D-7		254,321.444292	1,300,558.876282	8,110	0.0682 U		0.599			
SU-D-8		254,351.491137	1,300,589.636436	7,996	0.762		0.85			
SU-D-9		254,381.537983	1,300,620.396590	7,519	0.618		0.72			
SU-D-10		254,411.584828	1,300,651.156744	9,506	3.16		0.589			
SU-D-11		254,441.631674	1,300,681.916898	8,639	0.780		0.628			
SU-D-12	Composite Sample 9	254,279.603448	1,300,568.992791	8,314	1.04	0.391	0.733	0.512	0.434 U	0.366 U
SU-D-13		254,309.650293	1,300,599.752946	8,370	0.110		0.859			
SU-D-14		254,339.697139	1,300,630.513100	7,518	3.81		0.63			
SU-D-15		254,369.743984	1,300,661.273254	7,584	0.399		0.481			
SU-D-16		254,399.790830	1,300,692.033408	8,104	0.314		0.636			
SU-D-17		254,429.837675	1,300,722.793562	5,694	0.202		0.455			
SU-D-18		254,268.508213	1,300,610.584807	8,476	0.605		0.755			
SU-D-19		254,298.555058	1,300,641.344961	7,677	0.401		0.687			
SU-D-20		254,328.601904	1,300,672.105115	7,371	0.886		0.545			
SU-D-21		254,358.648749	1,300,702.865269	7,852	0.462		0.624			
SU-D-22		254,388.695595	1,300,733.625423	7,476	0.577		0.590			
				Average Result SU D	**0.72**	**0.40**	**0.59**	**0.57**	**0.47**	**0.50**
				SITEWIDE AVERAGE	**1.33**	**1.02**	**0.65**	**0.64**	**0.33**	**0.64**

Notes:

U - Analyte was analyzed for, but not detected above the MDL, MDA, LOD.

J - Value is estimated.

Denotes random start point

SU-D dimensions are 220'x150'

Coordintates in State Plane Long Island Survey Feet

L= 48' (N-S distance between points)

0.866 L= 42' (E-W distance between points)

Table 2

Summary of End-Point Sample Results for Radionuclides

	Cs-137	Sr-90	Ra-226	U-238
Cleanup Goal	23	15	5	9
Average	1.33	0.33	0.65	0.64
Maximum	7.4	1.58	0.859	1.16

Notes: All results in pCi/g

Table 3

Summary of End-Point Sample Results for Chemical Contaminants of Concern

	Lead	Mercury
Cleanup Goal	400	1.84
Average	11.7	0.0306
Maximum	20.2	0.0342

Notes: All results in mg/kg

Table 4

Summary of Post-Remediation Dose Assessment Results

	Resident at ≥ 50 years (mrem/yr)	Industrial Worker at ≥ 0 years (mrem/yr)
Dose with Ra-226 Background Subtracted	2.8	1.1
Dose without Ra-226 Background Subtracted	11	2.2

Appendix A
RESRAD Results

Summary : Perim Soil Add.3-Resident-Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : Perim Soil Add.3-Resident-Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1(1)
A-1	Ba-137m (Source: DCFPAK3.02)	3.381E+00	3.381E+00	DCF1(2)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1(3)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1(4)
A-1	Cs-137 (Source: DCFPAK3.02)	8.686E-04	8.687E-04	DCF1(5)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1(6)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1(7)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1(8)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1(9)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1(10)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1(11)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1(12)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1(13)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1(14)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1(15)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1(16)
A-1	Sr-90 (Source: DCFPAK3.02)	6.463E-04	6.464E-04	DCF1(17)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1(18)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1(19)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1(20)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1(21)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1(22)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1(23)
A-1	Y-90 (Source: DCFPAK3.02)	4.016E-02	4.017E-02	DCF1(24)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Cs-137+D	1.460E-04	1.457E-04	DCF2(1)
B-1	Pb-210+D	3.709E-02	2.077E-02	DCF2(2)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2(3)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2(4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2(5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2(8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2(11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2(14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2(17)
B-1	Sr-90+D	5.845E-04	5.786E-04	DCF2(20)
B-1	Th-230	3.760E-01	3.759E-01	DCF2(21)
B-1	U-234	3.480E-02	3.479E-02	DCF2(36)
B-1	U-238	2.970E-02	2.973E-02	DCF2(51)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2(52)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2(67)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Cs-137+D	5.030E-05	5.032E-05	DCF3(1)
D-1	Pb-210+D	7.065E-03	2.575E-03	DCF3(2)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3(3)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3(4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3(8)

Summary : Perim Soil Add.3-Resident-Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

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

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3(11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3(14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3(17)
D-1	Sr-90+D	1.119E-04	1.021E-04	DCF3(20)
D-1	Th-230	7.920E-04	7.918E-04	DCF3(21)
D-1	U-234	1.830E-04	1.831E-04	DCF3(36)
D-1	U-238	1.650E-04	1.650E-04	DCF3(51)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(52)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(67)
D-34	Food transfer factors:			
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(1,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(1,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , 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(20,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(20,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(20,3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(21,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(21,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(36,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(36,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(36,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(52,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(52,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(52,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(67,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(67,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(67,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(1,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				

Summary : Perim Soil Add.3-Resident-Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

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

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(20,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(20,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(21,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(21,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(36,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(36,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(52,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(52,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(67,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(67,2)
D-5				

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

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

Summary : Perim Soil Add.3-Resident-Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.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)	1.400E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	5.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	2.500E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	5.000E+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): Cs-137	1.330E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Ra-226	9.000E-02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Sr-90	3.300E-01	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-238	6.400E-01	0.000E+00	---	S1(51)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(51)
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)	1.660E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.300E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.400E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	6.230E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.600E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.230E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.600E-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	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.660E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.000E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.800E-03	2.000E-02	---	HGWT

Summary : Perim Soil Add.3-Resident-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.900E+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)	1.800E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	0.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.660E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.300E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.400E-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	4.900E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.889E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.618E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.574E-02	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(51)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(51,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(51)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(51)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(51)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.082E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.349E-06	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(36)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(36,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(36)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(36)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(36)
R017	Inhalation rate (m**3/yr)	7.300E+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	8.000E-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)

Summary : Perim Soil Add.3-Resident-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.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)	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)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	4.380E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-05	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	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Perim Soil Add.3-Resident-Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	65	---	---	KYMAX

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Summary of Pathway Selections

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

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	14000.00 square meters	Cs-137	1.330E+00
Thickness:	5.00 meters	Ra-226	9.000E-02
Cover Depth:	0.00 meters	Sr-90	3.300E-01
		U-238	6.400E-01

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	4.800E+00	4.794E+00	4.745E+00	4.616E+00	2.834E+00	2.089E+00	1.199E+00	8.634E-01
M(t):	3.200E-01	3.196E-01	3.163E-01	3.077E-01	1.889E-01	1.393E-01	7.993E-02	5.756E-02

Maximum TDOSE(t): 4.800E+00 mrem/yr at t = 0.000E+00 years

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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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.
Cs-137	2.563E+00	0.5340	4.205E-06	0.0000	0.000E+00	0.0000	2.301E-01	0.0479	0.000E+00	0.0000	0.000E+00	0.0000	2.172E-03	0.0005
Ra-226	5.766E-01	0.1201	7.073E-05	0.0000	0.000E+00	0.0000	3.360E-01	0.0700	0.000E+00	0.0000	0.000E+00	0.0000	3.399E-03	0.0007
Sr-90	8.049E-03	0.0017	4.123E-06	0.0000	0.000E+00	0.0000	9.411E-01	0.1960	0.000E+00	0.0000	0.000E+00	0.0000	1.184E-03	0.0002
U-238	6.372E-02	0.0133	4.158E-04	0.0001	0.000E+00	0.0000	2.465E-02	0.0051	0.000E+00	0.0000	0.000E+00	0.0000	3.723E-03	0.0008
Total	3.212E+00	0.6691	4.949E-04	0.0001	0.000E+00	0.0000	1.532E+00	0.3191	0.000E+00	0.0000	0.000E+00	0.0000	1.048E-02	0.0022

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

Water Dependent Pathways

Radio-	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.
Cs-137	4.466E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.967E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.796E+00	0.5824
Ra-226	6.238E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.022E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.161E-01	0.1909
Sr-90	3.836E-02	0.0080	0.000E+00	0.0000	0.000E+00	0.0000	2.865E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	9.915E-01	0.2066
U-238	4.014E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	9.680E-02	0.0202
Total	4.239E-02	0.0088	0.000E+00	0.0000	0.000E+00	0.0000	3.144E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	4.800E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Total Dose 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.
Cs-137	2.505E+00	0.5224	4.108E-06	0.0000	0.000E+00	0.0000	2.248E-01	0.0469	0.000E+00	0.0000	0.000E+00	0.0000	2.122E-03	0.0004
Ra-226	5.763E-01	0.1202	7.290E-05	0.0000	0.000E+00	0.0000	3.528E-01	0.0736	0.000E+00	0.0000	0.000E+00	0.0000	4.029E-03	0.0008
Sr-90	7.658E-03	0.0016	3.922E-06	0.0000	0.000E+00	0.0000	8.955E-01	0.1868	0.000E+00	0.0000	0.000E+00	0.0000	1.126E-03	0.0002
U-238	6.342E-02	0.0132	4.139E-04	0.0001	0.000E+00	0.0000	2.454E-02	0.0051	0.000E+00	0.0000	0.000E+00	0.0000	3.705E-03	0.0008
Total	3.152E+00	0.6574	4.948E-04	0.0001	0.000E+00	0.0000	1.498E+00	0.3124	0.000E+00	0.0000	0.000E+00	0.0000	1.098E-02	0.0023

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

Water Dependent Pathways

Radio-	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.
Cs-137	1.320E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.349E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.731E+00	0.5697
Ra-226	4.162E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.895E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.333E-01	0.1947
Sr-90	1.117E-01	0.0233	0.000E+00	0.0000	0.000E+00	0.0000	8.604E-03	0.0018	0.000E+00	0.0000	0.000E+00	0.0000	1.025E+00	0.2137
U-238	1.205E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	8.614E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-01	0.0219
Total	1.238E-01	0.0258	0.000E+00	0.0000	0.000E+00	0.0000	9.470E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	4.794E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+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.
Cs-137	2.282E+00	0.4809	3.743E-06	0.0000	0.000E+00	0.0000	2.049E-01	0.0432	0.000E+00	0.0000	0.000E+00	0.0000	1.934E-03	0.0004
Ra-226	5.750E-01	0.1212	8.089E-05	0.0000	0.000E+00	0.0000	4.137E-01	0.0872	0.000E+00	0.0000	0.000E+00	0.0000	6.350E-03	0.0013
Sr-90	6.274E-03	0.0013	3.214E-06	0.0000	0.000E+00	0.0000	7.337E-01	0.1546	0.000E+00	0.0000	0.000E+00	0.0000	9.226E-04	0.0002
U-238	6.223E-02	0.0131	4.062E-04	0.0001	0.000E+00	0.0000	2.408E-02	0.0051	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0008
Total	2.925E+00	0.6165	4.940E-04	0.0001	0.000E+00	0.0000	1.376E+00	0.2901	0.000E+00	0.0000	0.000E+00	0.0000	1.284E-02	0.0027

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+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.
Cs-137	4.430E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.226E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.489E+00	0.5245
Ra-226	4.901E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	3.532E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.957E-01	0.2098
Sr-90	3.545E-01	0.0747	0.000E+00	0.0000	0.000E+00	0.0000	2.770E-02	0.0058	0.000E+00	0.0000	0.000E+00	0.0000	1.123E+00	0.2367
U-238	4.384E-02	0.0092	0.000E+00	0.0000	0.000E+00	0.0000	3.178E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-01	0.0290
Total	3.989E-01	0.0841	0.000E+00	0.0000	0.000E+00	0.0000	3.091E-02	0.0065	0.000E+00	0.0000	0.000E+00	0.0000	4.745E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Total Dose 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.
Cs-137	2.031E+00	0.4400	3.332E-06	0.0000	0.000E+00	0.0000	1.824E-01	0.0395	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-03	0.0004
Ra-226	5.733E-01	0.1242	8.948E-05	0.0000	0.000E+00	0.0000	4.793E-01	0.1038	0.000E+00	0.0000	0.000E+00	0.0000	8.854E-03	0.0019
Sr-90	4.891E-03	0.0011	2.505E-06	0.0000	0.000E+00	0.0000	5.719E-01	0.1239	0.000E+00	0.0000	0.000E+00	0.0000	7.192E-04	0.0002
U-238	6.078E-02	0.0132	3.967E-04	0.0001	0.000E+00	0.0000	2.352E-02	0.0051	0.000E+00	0.0000	0.000E+00	0.0000	3.551E-03	0.0008
Total	2.670E+00	0.5785	4.920E-04	0.0001	0.000E+00	0.0000	1.257E+00	0.2723	0.000E+00	0.0000	0.000E+00	0.0000	1.485E-02	0.0032

Total Dose 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.
Cs-137	7.540E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.517E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.216E+00	0.4799
Ra-226	1.603E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.163E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.063E+00	0.2303
Sr-90	5.405E-01	0.1171	0.000E+00	0.0000	0.000E+00	0.0000	4.244E-02	0.0092	0.000E+00	0.0000	0.000E+00	0.0000	1.160E+00	0.2514
U-238	8.273E-02	0.0179	0.000E+00	0.0000	0.000E+00	0.0000	6.012E-03	0.0013	0.000E+00	0.0000	0.000E+00	0.0000	1.770E-01	0.0383
Total	6.249E-01	0.1354	0.000E+00	0.0000	0.000E+00	0.0000	4.857E-02	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	4.616E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	8.010E-01	0.2826	1.314E-06	0.0000	0.000E+00	0.0000	7.190E-02	0.0254	0.000E+00	0.0000	0.000E+00	0.0000	6.787E-04	0.0002
Ra-226	5.600E-01	0.1976	1.236E-04	0.0000	0.000E+00	0.0000	7.423E-01	0.2619	0.000E+00	0.0000	0.000E+00	0.0000	1.900E-02	0.0067
Sr-90	6.669E-04	0.0002	3.416E-07	0.0000	0.000E+00	0.0000	7.798E-02	0.0275	0.000E+00	0.0000	0.000E+00	0.0000	9.806E-05	0.0000
U-238	5.032E-02	0.0178	3.285E-04	0.0001	0.000E+00	0.0000	1.947E-02	0.0069	0.000E+00	0.0000	0.000E+00	0.0000	2.941E-03	0.0010
Total	1.412E+00	0.4983	4.538E-04	0.0002	0.000E+00	0.0000	9.117E-01	0.3217	0.000E+00	0.0000	0.000E+00	0.0000	2.272E-02	0.0080

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

Water Dependent Pathways

Radio-	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.
Cs-137	1.440E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.058E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.737E-01	0.3083
Ra-226	1.715E-02	0.0061	0.000E+00	0.0000	0.000E+00	0.0000	1.250E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	1.340E+00	0.4728
Sr-90	7.359E-02	0.0260	0.000E+00	0.0000	0.000E+00	0.0000	5.781E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-01	0.0558
U-238	3.627E-01	0.1280	0.000E+00	0.0000	0.000E+00	0.0000	2.641E-02	0.0093	0.000E+00	0.0000	0.000E+00	0.0000	4.621E-01	0.1631
Total	4.535E-01	0.1600	0.000E+00	0.0000	0.000E+00	0.0000	3.345E-02	0.0118	0.000E+00	0.0000	0.000E+00	0.0000	2.834E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Total Dose 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.
Cs-137	2.503E-01	0.1198	4.105E-07	0.0000	0.000E+00	0.0000	2.247E-02	0.0108	0.000E+00	0.0000	0.000E+00	0.0000	2.121E-04	0.0001
Ra-226	5.437E-01	0.2603	1.311E-04	0.0001	0.000E+00	0.0000	8.044E-01	0.3851	0.000E+00	0.0000	0.000E+00	0.0000	2.161E-02	0.0103
Sr-90	5.525E-05	0.0000	2.830E-08	0.0000	0.000E+00	0.0000	6.461E-03	0.0031	0.000E+00	0.0000	0.000E+00	0.0000	8.124E-06	0.0000
U-238	3.974E-02	0.0190	2.595E-04	0.0001	0.000E+00	0.0000	1.538E-02	0.0074	0.000E+00	0.0000	0.000E+00	0.0000	2.323E-03	0.0011
Total	8.338E-01	0.3991	3.910E-04	0.0002	0.000E+00	0.0000	8.487E-01	0.4063	0.000E+00	0.0000	0.000E+00	0.0000	2.415E-02	0.0116

Total Dose 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.
Cs-137	9.032E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.641E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.730E-01	0.1307
Ra-226	3.007E-02	0.0144	0.000E+00	0.0000	0.000E+00	0.0000	2.192E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	1.402E+00	0.6712
Sr-90	6.079E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	4.776E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	1.308E-02	0.0063
U-238	3.199E-01	0.1531	0.000E+00	0.0000	0.000E+00	0.0000	2.331E-02	0.0112	0.000E+00	0.0000	0.000E+00	0.0000	4.009E-01	0.1919
Total	3.561E-01	0.1705	0.000E+00	0.0000	0.000E+00	0.0000	2.598E-02	0.0124	0.000E+00	0.0000	0.000E+00	0.0000	2.089E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	2.274E-05	0.0000	3.730E-11	0.0000	0.000E+00	0.0000	2.041E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E-08	0.0000
Ra-226	4.285E-01	0.3575	1.056E-04	0.0001	0.000E+00	0.0000	6.513E-01	0.5433	0.000E+00	0.0000	0.000E+00	0.0000	1.769E-02	0.0148
Sr-90	1.227E-13	0.0000	6.284E-17	0.0000	0.000E+00	0.0000	1.435E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.804E-14	0.0000
U-238	6.014E-03	0.0050	3.932E-05	0.0000	0.000E+00	0.0000	2.331E-03	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	3.519E-04	0.0003
Total	4.346E-01	0.3625	1.449E-04	0.0001	0.000E+00	0.0000	6.537E-01	0.5452	0.000E+00	0.0000	0.000E+00	0.0000	1.804E-02	0.0150

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

Water Dependent Pathways

Radio-	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.
Cs-137	4.371E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.215E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.484E-05	0.0000
Ra-226	3.883E-02	0.0324	0.000E+00	0.0000	0.000E+00	0.0000	2.832E-03	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	1.139E+00	0.9503
Sr-90	1.314E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.866E-11	0.0000
U-238	4.732E-02	0.0395	0.000E+00	0.0000	0.000E+00	0.0000	3.448E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-02	0.0496
Total	8.615E-02	0.0719	0.000E+00	0.0000	0.000E+00	0.0000	6.281E-03	0.0052	0.000E+00	0.0000	0.000E+00	0.0000	1.199E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Total Dose 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.
Cs-137	2.017E-10	0.0000	3.308E-16	0.0000	0.000E+00	0.0000	1.810E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.709E-13	0.0000
Ra-226	3.183E-01	0.3686	7.844E-05	0.0001	0.000E+00	0.0000	4.837E-01	0.5603	0.000E+00	0.0000	0.000E+00	0.0000	1.314E-02	0.0152
Sr-90	1.870E-24	0.0000	9.578E-28	0.0000	0.000E+00	0.0000	2.187E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.750E-25	0.0000
U-238	5.686E-04	0.0007	3.723E-06	0.0000	0.000E+00	0.0000	2.218E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	3.332E-05	0.0000
Total	3.188E-01	0.3693	8.216E-05	0.0001	0.000E+00	0.0000	4.839E-01	0.5605	0.000E+00	0.0000	0.000E+00	0.0000	1.317E-02	0.0153

Total Dose 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.
Cs-137	8.431E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.203E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.208E-10	0.0000
Ra-226	3.983E-02	0.0461	0.000E+00	0.0000	0.000E+00	0.0000	2.905E-03	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	8.579E-01	0.9937
Sr-90	1.915E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.505E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.274E-22	0.0000
U-238	4.298E-03	0.0050	0.000E+00	0.0000	0.000E+00	0.0000	3.132E-04	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	5.438E-03	0.0063
Total	4.413E-02	0.0511	0.000E+00	0.0000	0.000E+00	0.0000	3.218E-03	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	8.634E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-Bkdg subtract
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.102E+00	2.054E+00	1.871E+00	1.666E+00	6.569E-01	2.053E-01	1.868E-05	1.660E-10
Ra-226+D	Ra-226+D	9.996E-01	1.006E+01	1.005E+01	1.003E+01	9.998E+00	9.763E+00	9.477E+00	7.473E+00	5.553E+00
Ra-226+D	Pb-210+D	9.996E-01	1.160E-01	3.123E-01	1.029E+00	1.810E+00	5.117E+00	6.094E+00	5.180E+00	3.974E+00
Ra-226+D	∑DSR(j)		1.017E+01	1.036E+01	1.106E+01	1.181E+01	1.488E+01	1.557E+01	1.265E+01	9.528E+00
Ra-226+D	Ra-226+D	1.319E-06	1.328E-05	1.327E-05	1.324E-05	1.320E-05	1.289E-05	1.251E-05	9.864E-06	7.330E-06
Ra-226+D	Pb-210+D1	1.319E-06	5.626E-08	1.515E-07	4.992E-07	8.781E-07	2.482E-06	2.956E-06	2.512E-06	1.927E-06
Ra-226+D	∑DSR(j)		1.333E-05	1.342E-05	1.374E-05	1.407E-05	1.537E-05	1.547E-05	1.238E-05	9.258E-06
Ra-226+D	Ra-226+D	1.899E-08	1.911E-07	1.910E-07	1.905E-07	1.900E-07	1.855E-07	1.801E-07	1.420E-07	1.055E-07
Ra-226+D	Pb-210+D2	1.899E-08	9.187E-10	2.503E-09	8.295E-09	1.460E-08	4.114E-08	4.887E-08	4.136E-08	3.161E-08
Ra-226+D	∑DSR(j)		1.920E-07	1.935E-07	1.988E-07	2.046E-07	2.266E-07	2.289E-07	1.833E-07	1.371E-07
Ra-226+D1	Ra-226+D1	2.100E-04	4.269E-03	4.266E-03	4.256E-03	4.243E-03	4.144E-03	4.022E-03	3.171E-03	2.356E-03
Ra-226+D1	Pb-210+D	2.100E-04	2.437E-05	6.559E-05	2.161E-04	3.802E-04	1.075E-03	1.280E-03	1.088E-03	8.348E-04
Ra-226+D1	∑DSR(j)		4.293E-03	4.332E-03	4.472E-03	4.624E-03	5.218E-03	5.302E-03	4.259E-03	3.190E-03
Ra-226+D1	Ra-226+D1	2.771E-10	5.635E-09	5.631E-09	5.618E-09	5.601E-09	5.470E-09	5.309E-09	4.186E-09	3.110E-09
Ra-226+D1	Pb-210+D1	2.771E-10	1.182E-11	3.182E-11	1.049E-10	1.844E-10	5.214E-10	6.209E-10	5.277E-10	4.048E-10
Ra-226+D1	∑DSR(j)		5.647E-09	5.663E-09	5.723E-09	5.786E-09	5.991E-09	5.930E-09	4.713E-09	3.514E-09
Ra-226+D1	Ra-226+D1	3.989E-12	8.111E-11	8.106E-11	8.087E-11	8.062E-11	7.873E-11	7.642E-11	6.025E-11	4.476E-11
Ra-226+D1	Pb-210+D2	3.989E-12	1.930E-13	5.257E-13	1.742E-12	3.066E-12	8.642E-12	1.026E-11	8.688E-12	6.638E-12
Ra-226+D1	∑DSR(j)		8.130E-11	8.158E-11	8.261E-11	8.369E-11	8.737E-11	8.669E-11	6.894E-11	5.140E-11
Ra-226+D2	Ra-226+D2	1.998E-04	1.854E-03	1.853E-03	1.848E-03	1.843E-03	1.800E-03	1.747E-03	1.378E-03	1.024E-03
Ra-226+D2	Pb-210+D	1.998E-04	2.319E-05	6.241E-05	2.056E-04	3.617E-04	1.023E-03	1.218E-03	1.035E-03	7.943E-04
Ra-226+D2	∑DSR(j)		1.877E-03	1.915E-03	2.054E-03	2.205E-03	2.822E-03	2.965E-03	2.413E-03	1.818E-03
Ra-226+D2	Ra-226+D2	2.637E-10	2.447E-09	2.446E-09	2.440E-09	2.433E-09	2.376E-09	2.306E-09	1.818E-09	1.351E-09
Ra-226+D2	Pb-210+D1	2.637E-10	1.124E-11	3.027E-11	9.977E-11	1.755E-10	4.961E-10	5.907E-10	5.021E-10	3.852E-10
Ra-226+D2	∑DSR(j)		2.458E-09	2.476E-09	2.540E-09	2.608E-09	2.872E-09	2.897E-09	2.320E-09	1.737E-09
Ra-226+D2	Ra-226+D2	3.795E-12	3.522E-11	3.520E-11	3.512E-11	3.502E-11	3.419E-11	3.319E-11	2.617E-11	1.945E-11
Ra-226+D2	Pb-210+D2	3.795E-12	1.836E-13	5.001E-13	1.658E-12	2.917E-12	8.222E-12	9.766E-12	8.266E-12	6.316E-12
Ra-226+D2	∑DSR(j)		3.541E-11	3.570E-11	3.678E-11	3.793E-11	4.242E-11	4.296E-11	3.444E-11	2.577E-11
Ra-226+D3	Ra-226+D3	4.196E-08	8.203E-07	8.198E-07	8.179E-07	8.155E-07	7.963E-07	7.730E-07	6.094E-07	4.527E-07
Ra-226+D3	Pb-210+D	4.196E-08	4.871E-09	1.311E-08	4.319E-08	7.597E-08	2.148E-07	2.558E-07	2.174E-07	1.668E-07
Ra-226+D3	∑DSR(j)		8.252E-07	8.329E-07	8.611E-07	8.914E-07	1.011E-06	1.029E-06	8.268E-07	6.195E-07
Ra-226+D3	Ra-226+D3	5.538E-14	1.083E-12	1.082E-12	1.080E-12	1.076E-12	1.051E-12	1.020E-12	8.044E-13	5.976E-13
Ra-226+D3	Pb-210+D1	5.538E-14	2.362E-15	6.358E-15	2.096E-14	3.686E-14	1.042E-13	1.241E-13	1.055E-13	8.090E-14
Ra-226+D3	∑DSR(j)		1.085E-12	1.089E-12	1.101E-12	1.113E-12	1.155E-12	1.144E-12	9.098E-13	6.785E-13

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226+D3	Ra-226+D3	7.972E-16	1.559E-14	1.558E-14	1.554E-14	1.549E-14	1.513E-14	1.469E-14	1.158E-14	8.601E-15
Ra-226+D3	Pb-210+D2	7.972E-16	3.856E-17	1.051E-16	3.482E-16	6.128E-16	1.727E-15	2.051E-15	1.736E-15	1.327E-15
Ra-226+D3	∑DSR(j)		1.562E-14	1.568E-14	1.589E-14	1.611E-14	1.686E-14	1.674E-14	1.331E-14	9.928E-15
Ra-226+D4	Ra-226+D4	2.000E-07	7.354E-07	7.350E-07	7.332E-07	7.311E-07	7.139E-07	6.931E-07	5.469E-07	4.068E-07
Ra-226+D4	Pb-210+D	2.000E-07	2.322E-08	6.248E-08	2.059E-07	3.621E-07	1.024E-06	1.219E-06	1.036E-06	7.952E-07
Ra-226+D4	∑DSR(j)		7.586E-07	7.975E-07	9.391E-07	1.093E-06	1.738E-06	1.912E-06	1.583E-06	1.202E-06
Ra-226+D4	Ra-226+D4	2.640E-13	9.707E-13	9.702E-13	9.679E-13	9.650E-13	9.424E-13	9.149E-13	7.220E-13	5.370E-13
Ra-226+D4	Pb-210+D1	2.640E-13	1.126E-14	3.031E-14	9.989E-14	1.757E-13	4.967E-13	5.914E-13	5.027E-13	3.856E-13
Ra-226+D4	∑DSR(j)		9.820E-13	1.000E-12	1.068E-12	1.141E-12	1.439E-12	1.506E-12	1.225E-12	9.227E-13
Ra-226+D4	Ra-226+D4	3.800E-15	1.397E-14	1.396E-14	1.393E-14	1.389E-14	1.356E-14	1.317E-14	1.039E-14	7.730E-15
Ra-226+D4	Pb-210+D2	3.800E-15	1.838E-16	5.007E-16	1.660E-15	2.921E-15	8.232E-15	9.778E-15	8.276E-15	6.324E-15
Ra-226+D4	∑DSR(j)		1.416E-14	1.447E-14	1.559E-14	1.681E-14	2.180E-14	2.295E-14	1.867E-14	1.405E-14
Sr-90+D	Sr-90+D	1.000E+00	3.005E+00	3.105E+00	3.403E+00	3.517E+00	4.791E-01	3.964E-02	8.685E-11	1.295E-21
U-238	U-238	5.450E-07	2.627E-08	3.299E-08	5.956E-08	9.207E-08	3.260E-07	2.858E-07	4.229E-08	3.842E-09
U-238+D	U-238+D	1.599E-03	8.304E-03	8.287E-03	8.218E-03	8.134E-03	7.530E-03	6.037E-03	9.105E-04	8.547E-05
U-238+D	U-234	1.599E-03	1.262E-10	4.608E-10	3.019E-09	8.894E-09	1.513E-07	2.640E-07	1.944E-07	3.528E-08
U-238+D	Th-230	1.599E-03	9.715E-16	5.788E-15	6.759E-14	2.369E-13	4.766E-12	1.619E-11	1.333E-10	1.845E-10
U-238+D	Ra-226+D	1.599E-03	2.882E-14	8.527E-14	3.467E-13	6.477E-13	5.867E-12	2.863E-11	1.247E-09	3.983E-09
U-238+D	Pb-210+D	1.599E-03	9.759E-13	2.884E-12	1.158E-11	2.079E-11	8.291E-11	1.620E-10	1.650E-09	4.986E-09
U-238+D	∑DSR(j)		8.304E-03	8.287E-03	8.218E-03	8.134E-03	7.530E-03	6.038E-03	9.107E-04	8.551E-05
U-238+D	U-238+D	2.111E-09	1.096E-08	1.094E-08	1.085E-08	1.074E-08	9.940E-09	7.969E-09	1.202E-09	1.128E-10
U-238+D	U-234	2.111E-09	1.666E-16	6.083E-16	3.985E-15	1.174E-14	1.997E-13	3.485E-13	2.566E-13	4.657E-14
U-238+D	Th-230	2.111E-09	1.282E-21	7.640E-21	8.922E-20	3.127E-19	6.292E-18	2.137E-17	1.760E-16	2.435E-16
U-238+D	Ra-226+D	2.111E-09	3.804E-20	1.126E-19	4.577E-19	8.549E-19	7.744E-18	3.779E-17	1.646E-15	5.258E-15
U-238+D	Pb-210+D1	2.111E-09	4.713E-19	1.393E-18	5.590E-18	1.004E-17	4.004E-17	7.820E-17	7.970E-16	2.408E-15
U-238+D	∑DSR(j)		1.096E-08	1.094E-08	1.085E-08	1.074E-08	9.940E-09	7.970E-09	1.202E-09	1.129E-10
U-238+D	U-238+D	3.039E-11	1.578E-10	1.574E-10	1.561E-10	1.546E-10	1.431E-10	1.147E-10	1.730E-11	1.624E-12
U-238+D	U-234	3.039E-11	2.398E-18	8.756E-18	5.735E-17	1.690E-16	2.875E-15	5.016E-15	3.693E-15	6.703E-16
U-238+D	Th-230	3.039E-11	1.846E-23	1.100E-22	1.284E-21	4.501E-21	9.056E-20	3.076E-19	2.534E-18	3.505E-18
U-238+D	Ra-226+D	3.039E-11	5.476E-22	1.620E-21	6.588E-21	1.231E-20	1.115E-19	5.440E-19	2.369E-17	7.568E-17
U-238+D	Pb-210+D2	3.039E-11	6.771E-21	2.001E-20	8.031E-20	1.442E-19	5.760E-19	1.132E-18	1.219E-17	3.718E-17
U-238+D	∑DSR(j)		1.578E-10	1.574E-10	1.561E-10	1.546E-10	1.431E-10	1.147E-10	1.730E-11	1.625E-12
U-238+D	U-238+D	3.359E-07	1.744E-06	1.741E-06	1.726E-06	1.709E-06	1.582E-06	1.268E-06	1.913E-07	1.795E-08
U-238+D	U-234	3.359E-07	2.651E-14	9.680E-14	6.340E-13	1.868E-12	3.178E-11	5.545E-11	4.083E-11	7.411E-12
U-238+D	Th-230	3.359E-07	2.041E-19	1.216E-18	1.420E-17	4.976E-17	1.001E-15	3.400E-15	2.801E-14	3.875E-14
U-238+D	Ra-226+D1	3.359E-07	6.055E-18	1.793E-17	7.390E-17	1.433E-16	1.967E-15	1.114E-14	5.224E-13	1.673E-12
U-238+D	Pb-210+D	3.359E-07	2.050E-16	6.059E-16	2.432E-15	4.366E-15	1.742E-14	3.402E-14	3.467E-13	1.047E-12
U-238+D	∑DSR(j)		1.744E-06	1.741E-06	1.726E-06	1.709E-06	1.582E-06	1.268E-06	1.913E-07	1.796E-08

Summary : Perim Soil Add.3-Resident-Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	4.434E-13	2.302E-12	2.298E-12	2.279E-12	2.255E-12	2.088E-12	1.674E-12	2.525E-13	2.370E-14
U-238+D	U-234	4.434E-13	3.499E-20	1.278E-19	8.369E-19	2.466E-18	4.195E-17	7.319E-17	5.390E-17	9.782E-18
U-238+D	Th-230	4.434E-13	2.694E-25	1.605E-24	1.874E-23	6.569E-23	1.322E-21	4.488E-21	3.697E-20	5.114E-20
U-238+D	Ra-226+D1	4.434E-13	7.993E-24	2.367E-23	9.754E-23	1.892E-22	2.597E-21	1.471E-20	6.896E-19	2.208E-18
U-238+D	Pb-210+D1	4.434E-13	9.900E-23	2.926E-22	1.174E-21	2.109E-21	8.410E-21	1.643E-20	1.674E-19	5.058E-19
U-238+D	∑DSR(j)		2.302E-12	2.298E-12	2.279E-12	2.255E-12	2.088E-12	1.674E-12	2.525E-13	2.371E-14
U-238+D	U-238+D	6.383E-15	3.314E-14	3.307E-14	3.280E-14	3.246E-14	3.005E-14	2.409E-14	3.634E-15	3.411E-16
U-238+D	U-234	6.383E-15	5.037E-22	1.839E-21	1.205E-20	3.550E-20	6.039E-19	1.054E-18	7.758E-19	1.408E-19
U-238+D	Th-230	6.383E-15	3.877E-27	2.310E-26	2.697E-25	9.455E-25	1.902E-23	6.461E-23	5.322E-22	7.362E-22
U-238+D	Ra-226+D1	6.383E-15	1.150E-25	3.407E-25	1.404E-24	2.724E-24	3.738E-23	2.117E-22	9.926E-21	3.178E-20
U-238+D	Pb-210+D2	6.383E-15	1.422E-24	4.204E-24	1.687E-23	3.029E-23	1.210E-22	2.376E-22	2.561E-21	7.810E-21
U-238+D	∑DSR(j)		3.314E-14	3.307E-14	3.280E-14	3.246E-14	3.005E-14	2.409E-14	3.635E-15	3.413E-16
U-238+D	U-238+D	3.196E-07	1.659E-06	1.656E-06	1.642E-06	1.626E-06	1.505E-06	1.206E-06	1.820E-07	1.708E-08
U-238+D	U-234	3.196E-07	2.522E-14	9.209E-14	6.032E-13	1.777E-12	3.024E-11	5.275E-11	3.885E-11	7.051E-12
U-238+D	Th-230	3.196E-07	1.941E-19	1.157E-18	1.351E-17	4.734E-17	9.525E-16	3.235E-15	2.665E-14	3.686E-14
U-238+D	Ra-226+D2	3.196E-07	5.756E-18	1.703E-17	6.918E-17	1.288E-16	1.119E-15	5.350E-15	2.303E-13	7.355E-13
U-238+D	Pb-210+D	3.196E-07	1.951E-16	5.765E-16	2.314E-15	4.154E-15	1.657E-14	3.237E-14	3.298E-13	9.964E-13
U-238+D	∑DSR(j)		1.659E-06	1.656E-06	1.642E-06	1.626E-06	1.505E-06	1.207E-06	1.820E-07	1.709E-08
U-238+D	U-238+D	4.219E-13	2.190E-12	2.186E-12	2.168E-12	2.146E-12	1.986E-12	1.593E-12	2.402E-13	2.255E-14
U-238+D	U-234	4.219E-13	3.329E-20	1.216E-19	7.963E-19	2.346E-18	3.991E-17	6.964E-17	5.128E-17	9.307E-18
U-238+D	Th-230	4.219E-13	2.563E-25	1.527E-24	1.783E-23	6.249E-23	1.257E-21	4.270E-21	3.518E-20	4.866E-20
U-238+D	Ra-226+D2	4.219E-13	7.598E-24	2.248E-23	9.132E-23	1.701E-22	1.477E-21	7.062E-21	3.040E-19	9.709E-19
U-238+D	Pb-210+D1	4.219E-13	9.419E-23	2.784E-22	1.117E-21	2.006E-21	8.002E-21	1.563E-20	1.593E-19	4.812E-19
U-238+D	∑DSR(j)		2.190E-12	2.186E-12	2.168E-12	2.146E-12	1.986E-12	1.593E-12	2.402E-13	2.256E-14
U-238+D	U-238+D	6.073E-15	3.153E-14	3.146E-14	3.120E-14	3.089E-14	2.859E-14	2.292E-14	3.457E-15	3.245E-16
U-238+D	U-234	6.073E-15	4.792E-22	1.750E-21	1.146E-20	3.377E-20	5.745E-19	1.002E-18	7.381E-19	1.340E-19
U-238+D	Th-230	6.073E-15	3.689E-27	2.198E-26	2.566E-25	8.995E-25	1.810E-23	6.147E-23	5.063E-22	7.004E-22
U-238+D	Ra-226+D2	6.073E-15	1.094E-25	3.236E-25	1.314E-24	2.448E-24	2.126E-23	1.017E-22	4.376E-21	1.397E-20
U-238+D	Pb-210+D2	6.073E-15	1.353E-24	3.999E-24	1.605E-23	2.882E-23	1.151E-22	2.261E-22	2.436E-21	7.430E-21
U-238+D	∑DSR(j)		3.153E-14	3.146E-14	3.120E-14	3.089E-14	2.859E-14	2.292E-14	3.458E-15	3.247E-16
U-238+D	U-238+D	6.713E-11	3.486E-10	3.478E-10	3.450E-10	3.414E-10	3.161E-10	2.534E-10	3.822E-11	3.588E-12
U-238+D	U-234	6.713E-11	5.298E-18	1.934E-17	1.267E-16	3.733E-16	6.351E-15	1.108E-14	8.159E-15	1.481E-15
U-238+D	Th-230	6.713E-11	4.078E-23	2.429E-22	2.837E-21	9.944E-21	2.001E-19	6.795E-19	5.597E-18	7.743E-18
U-238+D	Ra-226+D3	6.713E-11	1.209E-21	3.582E-21	1.474E-20	2.852E-20	3.819E-19	2.148E-18	1.004E-16	3.216E-16
U-238+D	Pb-210+D	6.713E-11	4.096E-20	1.211E-19	4.859E-19	8.725E-19	3.480E-18	6.798E-18	6.928E-17	2.093E-16
U-238+D	∑DSR(j)		3.486E-10	3.478E-10	3.450E-10	3.414E-10	3.161E-10	2.534E-10	3.823E-11	3.590E-12

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	8.862E-17	4.601E-16	4.591E-16	4.553E-16	4.507E-16	4.172E-16	3.345E-16	5.045E-17	4.736E-18
U-238+D	U-234	8.862E-17	6.993E-24	2.553E-23	1.673E-22	4.928E-22	8.384E-21	1.463E-20	1.077E-20	1.955E-21
U-238+D	Th-230	8.862E-17	5.383E-29	3.207E-28	3.745E-27	1.313E-26	2.641E-25	8.970E-25	7.388E-24	1.022E-23
U-238+D	Ra-226+D3	8.862E-17	1.596E-27	4.728E-27	1.946E-26	3.765E-26	5.041E-25	2.836E-24	1.326E-22	4.245E-22
U-238+D	Pb-210+D1	8.862E-17	1.978E-26	5.847E-26	2.347E-25	4.214E-25	1.681E-24	3.282E-24	3.345E-23	1.011E-22
U-238+D	∑DSR(j)		4.601E-16	4.591E-16	4.553E-16	4.507E-16	4.172E-16	3.345E-16	5.046E-17	4.738E-18
U-238+D	U-238+D	1.276E-18	6.623E-18	6.609E-18	6.554E-18	6.487E-18	6.005E-18	4.815E-18	7.262E-19	6.816E-20
U-238+D	U-234	1.276E-18	1.007E-25	3.675E-25	2.407E-24	7.094E-24	1.207E-22	2.105E-22	1.550E-22	2.814E-23
U-238+D	Th-230	1.276E-18	7.748E-31	4.616E-30	5.390E-29	1.889E-28	3.801E-27	1.291E-26	1.063E-25	1.471E-25
U-238+D	Ra-226+D3	1.276E-18	2.298E-29	6.805E-29	2.801E-28	5.419E-28	7.256E-27	4.082E-26	1.908E-24	6.110E-24
U-238+D	Pb-210+D2	1.276E-18	2.842E-28	8.400E-28	3.371E-27	6.054E-27	2.418E-26	4.750E-26	5.117E-25	1.561E-24
U-238+D	∑DSR(j)		6.623E-18	6.609E-18	6.554E-18	6.487E-18	6.006E-18	4.815E-18	7.263E-19	6.820E-20
U-238+D	U-238+D	3.200E-10	1.661E-09	1.658E-09	1.644E-09	1.628E-09	1.507E-09	1.208E-09	1.822E-10	1.710E-11
U-238+D	U-234	3.200E-10	2.525E-17	9.220E-17	6.040E-16	1.780E-15	3.027E-14	5.282E-14	3.889E-14	7.059E-15
U-238+D	Th-230	3.200E-10	1.944E-22	1.158E-21	1.352E-20	4.740E-20	9.537E-19	3.239E-18	2.668E-17	3.691E-17
U-238+D	Ra-226+D4	3.200E-10	5.760E-21	1.703E-20	6.868E-20	1.251E-19	7.383E-19	2.692E-18	9.521E-17	3.018E-16
U-238+D	Pb-210+D	3.200E-10	1.953E-19	5.771E-19	2.316E-18	4.159E-18	1.659E-17	3.240E-17	3.302E-16	9.976E-16
U-238+D	∑DSR(j)		1.661E-09	1.658E-09	1.644E-09	1.628E-09	1.507E-09	1.208E-09	1.822E-10	1.711E-11
U-238+D	U-238+D	4.224E-16	2.193E-15	2.189E-15	2.171E-15	2.148E-15	1.989E-15	1.594E-15	2.405E-16	2.257E-17
U-238+D	U-234	4.224E-16	3.333E-23	1.217E-22	7.972E-22	2.349E-21	3.996E-20	6.972E-20	5.134E-20	9.318E-21
U-238+D	Th-230	4.224E-16	2.566E-28	1.529E-27	1.785E-26	6.257E-26	1.259E-24	4.276E-24	3.522E-23	4.872E-23
U-238+D	Ra-226+D4	4.224E-16	7.604E-27	2.248E-26	9.066E-26	1.652E-25	9.745E-25	3.553E-24	1.257E-22	3.984E-22
U-238+D	Pb-210+D1	4.224E-16	9.430E-26	2.787E-25	1.119E-24	2.009E-24	8.011E-24	1.565E-23	1.595E-22	4.818E-22
U-238+D	∑DSR(j)		2.193E-15	2.189E-15	2.171E-15	2.148E-15	1.989E-15	1.595E-15	2.405E-16	2.258E-17
U-238+D	U-238+D	6.080E-18	3.157E-17	3.150E-17	3.124E-17	3.092E-17	2.863E-17	2.295E-17	3.461E-18	3.249E-19
U-238+D	U-234	6.080E-18	4.798E-25	1.752E-24	1.148E-23	3.381E-23	5.752E-22	1.004E-21	7.390E-22	1.341E-22
U-238+D	Th-230	6.080E-18	3.693E-30	2.200E-29	2.569E-28	9.006E-28	1.812E-26	6.154E-26	5.069E-25	7.013E-25
U-238+D	Ra-226+D4	6.080E-18	1.094E-28	3.236E-28	1.305E-27	2.378E-27	1.403E-26	5.114E-26	1.809E-24	5.734E-24
U-238+D	Pb-210+D2	6.080E-18	1.355E-27	4.004E-27	1.607E-26	2.886E-26	1.152E-25	2.264E-25	2.439E-24	7.439E-24
U-238+D	∑DSR(j)		3.157E-17	3.150E-17	3.124E-17	3.092E-17	2.863E-17	2.295E-17	3.462E-18	3.251E-19
U-238+D1	U-238+D1	9.980E-01	1.429E-01	1.557E-01	2.063E-01	2.683E-01	7.142E-01	6.199E-01	9.190E-02	8.381E-03
U-238+D1	U-234	9.980E-01	7.875E-08	2.876E-07	1.884E-06	5.550E-06	9.442E-05	1.647E-04	1.213E-04	2.202E-05
U-238+D1	Th-230	9.980E-01	6.062E-13	3.611E-12	4.217E-11	1.478E-10	2.974E-09	1.010E-08	8.321E-08	1.151E-07
U-238+D1	Ra-226+D	9.980E-01	1.798E-11	5.321E-11	2.164E-10	4.041E-10	3.661E-09	1.787E-08	7.780E-07	2.485E-06
U-238+D1	Pb-210+D	9.980E-01	6.090E-10	1.800E-09	7.223E-09	1.297E-08	5.174E-08	1.011E-07	1.030E-06	3.111E-06
U-238+D1	∑DSR(j)		1.429E-01	1.557E-01	2.063E-01	2.683E-01	7.143E-01	6.201E-01	9.203E-02	8.408E-03

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	1.317E-06	1.886E-07	2.055E-07	2.724E-07	3.541E-07	9.427E-07	8.183E-07	1.213E-07	1.106E-08
U-238+D1	U-234	1.317E-06	1.040E-13	3.796E-13	2.486E-12	7.326E-12	1.246E-10	2.174E-10	1.601E-10	2.906E-11
U-238+D1	Th-230	1.317E-06	8.002E-19	4.767E-18	5.567E-17	1.951E-16	3.926E-15	1.333E-14	1.098E-13	1.519E-13
U-238+D1	Ra-226+D	1.317E-06	2.374E-17	7.023E-17	2.856E-16	5.335E-16	4.832E-15	2.358E-14	1.027E-12	3.281E-12
U-238+D1	Pb-210+D1	1.317E-06	2.941E-16	8.693E-16	3.489E-15	6.264E-15	2.499E-14	4.880E-14	4.973E-13	1.503E-12
U-238+D1	∑DSR(j)		1.886E-07	2.055E-07	2.724E-07	3.542E-07	9.428E-07	8.185E-07	1.215E-07	1.110E-08
U-238+D1	U-238+D1	1.896E-08	2.715E-09	2.958E-09	3.920E-09	5.098E-09	1.357E-08	1.178E-08	1.746E-09	1.592E-10
U-238+D1	U-234	1.896E-08	1.496E-15	5.464E-15	3.579E-14	1.055E-13	1.794E-12	3.130E-12	2.305E-12	4.183E-13
U-238+D1	Th-230	1.896E-08	1.152E-20	6.862E-20	8.013E-19	2.809E-18	5.651E-17	1.919E-16	1.581E-15	2.187E-15
U-238+D1	Ra-226+D	1.896E-08	3.417E-19	1.011E-18	4.111E-18	7.679E-18	6.956E-17	3.394E-16	1.478E-14	4.722E-14
U-238+D1	Pb-210+D2	1.896E-08	4.225E-18	1.249E-17	5.012E-17	8.999E-17	3.594E-16	7.061E-16	7.608E-15	2.320E-14
U-238+D1	∑DSR(j)		2.715E-09	2.958E-09	3.920E-09	5.098E-09	1.357E-08	1.178E-08	1.749E-09	1.597E-10
U-238+D1	U-238+D1	2.096E-04	3.001E-05	3.270E-05	4.334E-05	5.635E-05	1.500E-04	1.302E-04	1.930E-05	1.760E-06
U-238+D1	U-234	2.096E-04	1.654E-11	6.040E-11	3.956E-10	1.166E-09	1.983E-08	3.460E-08	2.548E-08	4.624E-09
U-238+D1	Th-230	2.096E-04	1.273E-16	7.586E-16	8.858E-15	3.105E-14	6.247E-13	2.122E-12	1.748E-11	2.418E-11
U-238+D1	Ra-226+D1	2.096E-04	3.778E-15	1.119E-14	4.611E-14	8.945E-14	1.228E-12	6.952E-12	3.260E-10	1.044E-09
U-238+D1	Pb-210+D	2.096E-04	1.279E-13	3.780E-13	1.517E-12	2.724E-12	1.087E-11	2.123E-11	2.163E-10	6.535E-10
U-238+D1	∑DSR(j)		3.001E-05	3.270E-05	4.334E-05	5.635E-05	1.500E-04	1.302E-04	1.933E-05	1.767E-06
U-238+D1	U-238+D1	2.767E-10	3.962E-11	4.317E-11	5.721E-11	7.439E-11	1.980E-10	1.719E-10	2.548E-11	2.324E-12
U-238+D1	U-234	2.767E-10	2.184E-17	7.973E-17	5.222E-16	1.539E-15	2.618E-14	4.567E-14	3.363E-14	6.104E-15
U-238+D1	Th-230	2.767E-10	1.681E-22	1.001E-21	1.169E-20	4.099E-20	8.246E-19	2.801E-18	2.307E-17	3.191E-17
U-238+D1	Ra-226+D1	2.767E-10	4.987E-21	1.477E-20	6.087E-20	1.181E-19	1.620E-18	9.176E-18	4.303E-16	1.378E-15
U-238+D1	Pb-210+D1	2.767E-10	6.178E-20	1.826E-19	7.328E-19	1.316E-18	5.248E-18	1.025E-17	1.045E-16	3.156E-16
U-238+D1	∑DSR(j)		3.962E-11	4.317E-11	5.721E-11	7.439E-11	1.980E-10	1.719E-10	2.552E-11	2.331E-12
U-238+D1	U-238+D1	3.983E-12	5.703E-13	6.214E-13	8.235E-13	1.071E-12	2.850E-12	2.474E-12	3.668E-13	3.345E-14
U-238+D1	U-234	3.983E-12	3.143E-19	1.148E-18	7.517E-18	2.215E-17	3.768E-16	6.574E-16	4.841E-16	8.786E-17
U-238+D1	Th-230	3.983E-12	2.419E-24	1.441E-23	1.683E-22	5.900E-22	1.187E-20	4.031E-20	3.321E-19	4.594E-19
U-238+D1	Ra-226+D1	3.983E-12	7.179E-23	2.126E-22	8.761E-22	1.700E-21	2.332E-20	1.321E-19	6.194E-18	1.983E-17
U-238+D1	Pb-210+D2	3.983E-12	8.875E-22	2.623E-21	1.053E-20	1.890E-20	7.549E-20	1.483E-19	1.598E-18	4.873E-18
U-238+D1	∑DSR(j)		5.703E-13	6.214E-13	8.235E-13	1.071E-12	2.850E-12	2.475E-12	3.673E-13	3.356E-14
U-238+D1	U-238+D1	1.994E-04	2.856E-05	3.111E-05	4.123E-05	5.362E-05	1.427E-04	1.239E-04	1.837E-05	1.675E-06
U-238+D1	U-234	1.994E-04	1.574E-11	5.747E-11	3.764E-10	1.109E-09	1.887E-08	3.292E-08	2.424E-08	4.400E-09
U-238+D1	Th-230	1.994E-04	1.211E-16	7.217E-16	8.428E-15	2.954E-14	5.944E-13	2.019E-12	1.663E-11	2.300E-11
U-238+D1	Ra-226+D2	1.994E-04	3.592E-15	1.063E-14	4.317E-14	8.040E-14	6.983E-13	3.339E-12	1.437E-10	4.590E-10
U-238+D1	Pb-210+D	1.994E-04	1.217E-13	3.597E-13	1.443E-12	2.592E-12	1.034E-11	2.020E-11	2.058E-10	6.218E-10
U-238+D1	∑DSR(j)		2.856E-05	3.111E-05	4.123E-05	5.362E-05	1.427E-04	1.239E-04	1.839E-05	1.680E-06

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.633E-10	3.769E-11	4.107E-11	5.443E-11	7.077E-11	1.884E-10	1.635E-10	2.424E-11	2.211E-12
U-238+D1	U-234	2.633E-10	2.077E-17	7.586E-17	4.969E-16	1.464E-15	2.491E-14	4.345E-14	3.200E-14	5.807E-15
U-238+D1	Th-230	2.633E-10	1.599E-22	9.527E-22	1.113E-20	3.900E-20	7.846E-19	2.665E-18	2.195E-17	3.036E-17
U-238+D1	Ra-226+D2	2.633E-10	4.741E-21	1.403E-20	5.698E-20	1.061E-19	9.218E-19	4.407E-18	1.897E-16	6.058E-16
U-238+D1	Pb-210+D1	2.633E-10	5.877E-20	1.737E-19	6.971E-19	1.252E-18	4.993E-18	9.752E-18	9.938E-17	3.003E-16
U-238+D1	∑DSR(j)		3.769E-11	4.107E-11	5.443E-11	7.077E-11	1.884E-10	1.636E-10	2.428E-11	2.217E-12
U-238+D1	U-238+D1	3.789E-12	5.425E-13	5.912E-13	7.835E-13	1.019E-12	2.712E-12	2.354E-12	3.490E-13	3.182E-14
U-238+D1	U-234	3.789E-12	2.990E-19	1.092E-18	7.152E-18	2.107E-17	3.585E-16	6.255E-16	4.606E-16	8.359E-17
U-238+D1	Th-230	3.789E-12	2.302E-24	1.371E-23	1.601E-22	5.613E-22	1.129E-20	3.836E-20	3.159E-19	4.371E-19
U-238+D1	Ra-226+D2	3.789E-12	6.825E-23	2.019E-22	8.202E-22	1.528E-21	1.327E-20	6.343E-20	2.731E-18	8.720E-18
U-238+D1	Pb-210+D2	3.789E-12	8.444E-22	2.496E-21	1.002E-20	1.799E-20	7.183E-20	1.411E-19	1.520E-18	4.637E-18
U-238+D1	∑DSR(j)		5.425E-13	5.912E-13	7.835E-13	1.019E-12	2.712E-12	2.354E-12	3.494E-13	3.192E-14
U-238+D1	U-238+D1	4.189E-08	5.998E-09	6.535E-09	8.661E-09	1.126E-08	2.998E-08	2.602E-08	3.858E-09	3.518E-10
U-238+D1	U-234	4.189E-08	3.306E-15	1.207E-14	7.906E-14	2.330E-13	3.963E-12	6.914E-12	5.091E-12	9.241E-13
U-238+D1	Th-230	4.189E-08	2.545E-20	1.516E-19	1.770E-18	6.205E-18	1.248E-16	4.240E-16	3.493E-15	4.832E-15
U-238+D1	Ra-226+D3	4.189E-08	7.547E-19	2.235E-18	9.200E-18	1.780E-17	2.383E-16	1.341E-15	6.267E-14	2.007E-13
U-238+D1	Pb-210+D	4.189E-08	2.556E-17	7.554E-17	3.032E-16	5.444E-16	2.172E-15	4.242E-15	4.323E-14	1.306E-13
U-238+D1	∑DSR(j)		5.998E-09	6.535E-09	8.661E-09	1.126E-08	2.998E-08	2.603E-08	3.863E-09	3.530E-10
U-238+D1	U-238+D1	5.530E-14	7.917E-15	8.627E-15	1.143E-14	1.487E-14	3.957E-14	3.435E-14	5.092E-15	4.644E-16
U-238+D1	U-234	5.530E-14	4.364E-21	1.593E-20	1.044E-19	3.075E-19	5.231E-18	9.127E-18	6.721E-18	1.220E-18
U-238+D1	Th-230	5.530E-14	3.359E-26	2.001E-25	2.337E-24	8.191E-24	1.648E-22	5.597E-22	4.610E-21	6.378E-21
U-238+D1	Ra-226+D3	5.530E-14	9.962E-25	2.950E-24	1.214E-23	2.349E-23	3.146E-22	1.770E-21	8.273E-20	2.649E-19
U-238+D1	Pb-210+D1	5.530E-14	1.234E-23	3.648E-23	1.464E-22	2.629E-22	1.049E-21	2.048E-21	2.087E-20	6.308E-20
U-238+D1	∑DSR(j)		7.917E-15	8.627E-15	1.143E-14	1.487E-14	3.957E-14	3.436E-14	5.099E-15	4.659E-16
U-238+D1	U-238+D1	7.959E-16	1.140E-16	1.242E-16	1.646E-16	2.140E-16	5.696E-16	4.944E-16	7.330E-17	6.684E-18
U-238+D1	U-234	7.959E-16	6.281E-23	2.293E-22	1.502E-21	4.426E-21	7.530E-20	1.314E-19	9.674E-20	1.756E-20
U-238+D1	Th-230	7.959E-16	4.835E-28	2.880E-27	3.364E-26	1.179E-25	2.372E-24	8.056E-24	6.636E-23	9.180E-23
U-238+D1	Ra-226+D3	7.959E-16	1.434E-26	4.247E-26	1.748E-25	3.382E-25	4.528E-24	2.547E-23	1.191E-21	3.813E-21
U-238+D1	Pb-210+D2	7.959E-16	1.774E-25	5.242E-25	2.104E-24	3.778E-24	1.509E-23	2.964E-23	3.193E-22	9.739E-22
U-238+D1	∑DSR(j)		1.140E-16	1.242E-16	1.646E-16	2.140E-16	5.696E-16	4.945E-16	7.340E-17	6.706E-18
U-238+D1	U-238+D1	1.997E-07	2.859E-08	3.115E-08	4.128E-08	5.368E-08	1.429E-07	1.240E-07	1.839E-08	1.677E-09
U-238+D1	U-234	1.997E-07	1.576E-14	5.754E-14	3.769E-13	1.110E-12	1.889E-11	3.296E-11	2.427E-11	4.405E-12
U-238+D1	Th-230	1.997E-07	1.213E-19	7.226E-19	8.438E-18	2.958E-17	5.951E-16	2.021E-15	1.665E-14	2.303E-14
U-238+D1	Ra-226+D4	1.997E-07	3.594E-18	1.063E-17	4.286E-17	7.809E-17	4.607E-16	1.680E-15	5.941E-14	1.883E-13
U-238+D1	Pb-210+D	1.997E-07	1.219E-16	3.601E-16	1.445E-15	2.595E-15	1.035E-14	2.022E-14	2.061E-13	6.225E-13
U-238+D1	∑DSR(j)		2.859E-08	3.115E-08	4.128E-08	5.368E-08	1.429E-07	1.241E-07	1.841E-08	1.682E-09

Summary : Perim Soil Add.3-Resident-Bkdg subtract
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.636E-13	3.774E-14	4.112E-14	5.450E-14	7.086E-14	1.886E-13	1.637E-13	2.427E-14	2.213E-15
U-238+D1	U-234	2.636E-13	2.080E-20	7.595E-20	4.975E-19	1.466E-18	2.494E-17	4.351E-17	3.204E-17	5.814E-18
U-238+D1	Th-230	2.636E-13	1.601E-25	9.538E-25	1.114E-23	3.904E-23	7.855E-22	2.668E-21	2.198E-20	3.040E-20
U-238+D1	Ra-226+D4	2.636E-13	4.745E-24	1.403E-23	5.657E-23	1.031E-22	6.081E-22	2.217E-21	7.843E-20	2.486E-19
U-238+D1	Pb-210+D1	2.636E-13	5.885E-23	1.739E-22	6.981E-22	1.253E-21	4.999E-21	9.764E-21	9.950E-20	3.007E-19
U-238+D1	∑DSR(j)		3.774E-14	4.112E-14	5.450E-14	7.086E-14	1.886E-13	1.638E-13	2.431E-14	2.220E-15
U-238+D1	U-238+D1	3.794E-15	5.432E-16	5.919E-16	7.844E-16	1.020E-15	2.715E-15	2.357E-15	3.494E-16	3.186E-17
U-238+D1	U-234	3.794E-15	2.994E-22	1.093E-21	7.161E-21	2.110E-20	3.589E-19	6.262E-19	4.611E-19	8.369E-20
U-238+D1	Th-230	3.794E-15	2.305E-27	1.373E-26	1.603E-25	5.620E-25	1.131E-23	3.840E-23	3.163E-22	4.376E-22
U-238+D1	Ra-226+D4	3.794E-15	6.829E-26	2.019E-25	8.143E-25	1.484E-24	8.753E-24	3.191E-23	1.129E-21	3.578E-21
U-238+D1	Pb-210+D2	3.794E-15	8.454E-25	2.499E-24	1.003E-23	1.801E-23	7.191E-23	1.413E-22	1.522E-21	4.642E-21
U-238+D1	∑DSR(j)		5.432E-16	5.919E-16	7.844E-16	1.020E-15	2.715E-15	2.357E-15	3.498E-16	3.195E-17

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	7.136E+00	7.304E+00	8.016E+00	9.005E+00	2.283E+01	7.306E+01	8.030E+05	9.034E+10
Ra-226	1.474E+00	1.447E+00	1.356E+00	1.270E+00	1.008E+00	9.628E-01	1.185E+00	1.574E+00
Sr-90	4.992E+00	4.831E+00	4.407E+00	4.266E+00	3.131E+01	3.784E+02	1.727E+11	*1.366E+14
U-238	9.917E+01	9.144E+01	6.988E+01	5.424E+01	2.077E+01	2.395E+01	1.613E+02	1.765E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin) (pCi/g)	G(i,tmin) (pCi/g)	DSR(i,tmax) (pCi/g)	G(i,tmax) (pCi/g)
Cs-137	1.330E+00	0.000E+00	2.102E+00	7.136E+00	2.102E+00	7.136E+00
Ra-226	9.000E-02	102.9 ± 0.2	1.558E+01	9.628E-01	1.018E+01	1.474E+00
Sr-90	3.300E-01	9.37 ± 0.02	3.574E+00	4.196E+00	3.005E+00	4.992E+00
U-238	6.400E-01	55.5 ± 0.1	7.736E-01	1.939E+01	1.513E-01	9.917E+01

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.796E+00	2.731E+00	2.489E+00	2.216E+00	8.737E-01	2.730E-01	2.484E-05	2.208E-10
Ra-226	Ra-226	9.996E-01	9.051E-01	9.046E-01	9.025E-01	8.998E-01	8.786E-01	8.529E-01	6.726E-01	4.998E-01
Ra-226	Ra-226	1.319E-06	1.195E-06	1.194E-06	1.191E-06	1.188E-06	1.160E-06	1.126E-06	8.878E-07	6.597E-07
Ra-226	U-238	1.599E-03	1.844E-14	5.457E-14	2.219E-13	4.145E-13	3.755E-12	1.832E-11	7.980E-10	2.549E-09
Ra-226	U-238	2.111E-09	2.435E-20	7.203E-20	2.929E-19	5.472E-19	4.956E-18	2.419E-17	1.053E-15	3.365E-15
Ra-226	U-238	3.039E-11	3.505E-22	1.037E-21	4.216E-21	7.876E-21	7.134E-20	3.481E-19	1.516E-17	4.843E-17
Ra-226	U-238	9.980E-01	1.151E-11	3.405E-11	1.385E-10	2.587E-10	2.343E-09	1.143E-08	4.979E-07	1.591E-06
Ra-226	U-238	1.317E-06	1.519E-17	4.495E-17	1.828E-16	3.414E-16	3.093E-15	1.509E-14	6.573E-13	2.100E-12
Ra-226	U-238	1.896E-08	2.187E-19	6.470E-19	2.631E-18	4.914E-18	4.452E-17	2.172E-16	9.461E-15	3.022E-14
Ra-226	∑DOSE(j)		9.051E-01	9.046E-01	9.025E-01	8.998E-01	8.786E-01	8.529E-01	6.726E-01	4.998E-01
Pb-210	Ra-226	9.996E-01	1.044E-02	2.811E-02	9.261E-02	1.629E-01	4.605E-01	5.484E-01	4.662E-01	3.577E-01
Pb-210	Ra-226	2.100E-04	2.194E-06	5.903E-06	1.945E-05	3.421E-05	9.673E-05	1.152E-04	9.792E-05	7.513E-05
Pb-210	Ra-226	1.998E-04	2.087E-06	5.617E-06	1.851E-05	3.255E-05	9.203E-05	1.096E-04	9.316E-05	7.148E-05
Pb-210	Ra-226	4.196E-08	4.384E-10	1.180E-09	3.887E-09	6.837E-09	1.933E-08	2.302E-08	1.957E-08	1.501E-08
Pb-210	Ra-226	2.000E-07	2.090E-09	5.623E-09	1.853E-08	3.259E-08	9.214E-08	1.097E-07	9.328E-08	7.157E-08
Pb-210	U-238	1.599E-03	6.246E-13	1.846E-12	7.408E-12	1.330E-11	5.306E-11	1.037E-10	1.056E-09	3.191E-09
Pb-210	U-238	3.359E-07	1.312E-16	3.878E-16	1.556E-15	2.795E-15	1.115E-14	2.177E-14	2.219E-13	6.703E-13
Pb-210	U-238	3.196E-07	1.248E-16	3.689E-16	1.481E-15	2.659E-15	1.061E-14	2.071E-14	2.111E-13	6.377E-13
Pb-210	U-238	6.713E-11	2.622E-20	7.748E-20	3.110E-19	5.584E-19	2.227E-18	4.351E-18	4.434E-17	1.339E-16
Pb-210	U-238	3.200E-10	1.250E-19	3.693E-19	1.482E-18	2.662E-18	1.062E-17	2.074E-17	2.113E-16	6.385E-16
Pb-210	U-238	9.980E-01	3.897E-10	1.152E-09	4.623E-09	8.301E-09	3.311E-08	6.468E-08	6.591E-07	1.991E-06
Pb-210	U-238	2.096E-04	8.186E-14	2.419E-13	9.710E-13	1.744E-12	6.955E-12	1.359E-11	1.384E-10	4.182E-10
Pb-210	U-238	1.994E-04	7.789E-14	2.302E-13	9.238E-13	1.659E-12	6.617E-12	1.293E-11	1.317E-10	3.979E-10
Pb-210	U-238	4.189E-08	1.636E-17	4.835E-17	1.940E-16	3.484E-16	1.390E-15	2.715E-15	2.767E-14	8.358E-14
Pb-210	U-238	1.997E-07	7.798E-17	2.305E-16	9.250E-16	1.661E-15	6.626E-15	1.294E-14	1.319E-13	3.984E-13
Pb-210	∑DOSE(j)		1.045E-02	2.812E-02	9.265E-02	1.630E-01	4.607E-01	5.486E-01	4.664E-01	3.579E-01
Pb-210	Ra-226	1.319E-06	5.064E-09	1.363E-08	4.493E-08	7.903E-08	2.234E-07	2.660E-07	2.261E-07	1.735E-07
Pb-210	Ra-226	1.899E-08	8.268E-11	2.252E-10	7.466E-10	1.314E-09	3.703E-09	4.398E-09	3.723E-09	2.844E-09
Pb-210	Ra-226	2.771E-10	1.064E-12	2.864E-12	9.437E-12	1.660E-11	4.693E-11	5.588E-11	4.749E-11	3.644E-11
Pb-210	Ra-226	2.637E-10	1.012E-12	2.724E-12	8.979E-12	1.579E-11	4.465E-11	5.316E-11	4.519E-11	3.467E-11
Pb-210	Ra-226	5.538E-14	2.126E-16	5.723E-16	1.886E-15	3.317E-15	9.378E-15	1.117E-14	9.491E-15	7.281E-15
Pb-210	Ra-226	2.640E-13	1.013E-15	2.728E-15	8.990E-15	1.581E-14	4.470E-14	5.323E-14	4.524E-14	3.471E-14
Pb-210	U-238	2.111E-09	3.016E-19	8.915E-19	3.578E-18	6.424E-18	2.563E-17	5.005E-17	5.101E-16	1.541E-15
Pb-210	U-238	4.434E-13	6.336E-23	1.873E-22	7.515E-22	1.349E-21	5.383E-21	1.051E-20	1.071E-19	3.237E-19
Pb-210	U-238	4.219E-13	6.028E-23	1.781E-22	7.150E-22	1.284E-21	5.121E-21	1.000E-20	1.019E-19	3.080E-19
Pb-210	U-238	8.862E-17	1.266E-26	3.742E-26	1.502E-25	2.697E-25	1.076E-24	2.101E-24	2.141E-23	6.469E-23
Pb-210	U-238	4.224E-16	6.035E-26	1.784E-25	7.159E-25	1.285E-24	5.127E-24	1.001E-23	1.021E-22	3.084E-22
Pb-210	U-238	1.317E-06	1.882E-16	5.563E-16	2.233E-15	4.009E-15	1.599E-14	3.123E-14	3.183E-13	9.617E-13
Pb-210	U-238	2.767E-10	3.954E-20	1.169E-19	4.690E-19	8.421E-19	3.359E-18	6.560E-18	6.685E-17	2.020E-16
Pb-210	U-238	2.633E-10	3.761E-20	1.112E-19	4.461E-19	8.011E-19	3.195E-18	6.241E-18	6.360E-17	1.922E-16
Pb-210	U-238	5.530E-14	7.900E-24	2.335E-23	9.371E-23	1.683E-22	6.712E-22	1.311E-21	1.336E-20	4.037E-20
Pb-210	U-238	2.636E-13	3.767E-23	1.113E-22	4.468E-22	8.022E-22	3.200E-21	6.249E-21	6.368E-20	1.924E-19
Pb-210	∑DOSE(j)		5.149E-09	1.386E-08	4.570E-08	8.038E-08	2.272E-07	2.705E-07	2.299E-07	1.764E-07
Ra-226	Ra-226	1.899E-08	1.720E-08	1.719E-08	1.715E-08	1.710E-08	1.669E-08	1.621E-08	1.278E-08	9.496E-09
Ra-226	Ra-226	2.100E-04	3.842E-04	3.840E-04	3.830E-04	3.819E-04	3.729E-04	3.620E-04	2.854E-04	2.120E-04
Ra-226	∑DOSE(j)		3.842E-04	3.840E-04	3.831E-04	3.819E-04	3.729E-04	3.620E-04	2.854E-04	2.120E-04

Summary : Perim Soil Add.3-Resident-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	5.071E-10	5.068E-10	5.056E-10	5.041E-10	4.923E-10	4.779E-10	3.767E-10	2.799E-10
Ra-226	Ra-226	3.989E-12	7.300E-12	7.295E-12	7.278E-12	7.256E-12	7.086E-12	6.878E-12	5.422E-12	4.028E-12
Ra-226	∑DOSE(j)		5.144E-10	5.141E-10	5.129E-10	5.114E-10	4.994E-10	4.847E-10	3.821E-10	2.839E-10
Pb-210	Ra-226	3.989E-12	1.737E-14	4.731E-14	1.568E-13	2.760E-13	7.778E-13	9.238E-13	7.820E-13	5.975E-13
Pb-210	Ra-226	3.795E-12	1.652E-14	4.501E-14	1.492E-13	2.626E-13	7.400E-13	8.789E-13	7.440E-13	5.684E-13
Pb-210	Ra-226	7.972E-16	3.471E-18	9.455E-18	3.134E-17	5.515E-17	1.554E-16	1.846E-16	1.563E-16	1.194E-16
Pb-210	Ra-226	3.800E-15	1.654E-17	4.507E-17	1.494E-16	2.629E-16	7.409E-16	8.800E-16	7.449E-16	5.691E-16
Pb-210	U-238	3.039E-11	4.334E-21	1.281E-20	5.140E-20	9.230E-20	3.686E-19	7.242E-19	7.803E-18	2.380E-17
Pb-210	U-238	6.383E-15	9.103E-25	2.690E-24	1.080E-23	1.939E-23	7.743E-23	1.521E-22	1.639E-21	4.998E-21
Pb-210	U-238	6.073E-15	8.660E-25	2.560E-24	1.027E-23	1.845E-23	7.367E-23	1.447E-22	1.559E-21	4.755E-21
Pb-210	U-238	1.276E-18	1.819E-28	5.376E-28	2.158E-27	3.874E-27	1.547E-26	3.040E-26	3.275E-25	9.989E-25
Pb-210	U-238	6.080E-18	8.671E-28	2.563E-27	1.028E-26	1.847E-26	7.376E-26	1.449E-25	1.561E-24	4.761E-24
Pb-210	U-238	1.896E-08	2.704E-18	7.992E-18	3.207E-17	5.760E-17	2.300E-16	4.519E-16	4.869E-15	1.485E-14
Pb-210	U-238	3.983E-12	5.680E-22	1.679E-21	6.737E-21	1.210E-20	4.831E-20	9.492E-20	1.023E-18	3.119E-18
Pb-210	U-238	3.789E-12	5.404E-22	1.597E-21	6.410E-21	1.151E-20	4.597E-20	9.031E-20	9.730E-19	2.967E-18
Pb-210	U-238	7.959E-16	1.135E-25	3.355E-25	1.346E-24	2.418E-24	9.655E-24	1.897E-23	2.044E-22	6.233E-22
Pb-210	U-238	3.794E-15	5.411E-25	1.599E-24	6.418E-24	1.152E-23	4.602E-23	9.042E-23	9.742E-22	2.971E-21
Pb-210	∑DOSE(j)		3.391E-14	9.239E-14	3.062E-13	5.389E-13	1.519E-12	1.804E-12	1.532E-12	1.181E-12
Ra-226	Ra-226	1.998E-04	1.669E-04	1.668E-04	1.664E-04	1.659E-04	1.620E-04	1.572E-04	1.240E-04	9.214E-05
Ra-226	Ra-226	2.637E-10	2.202E-10	2.201E-10	2.196E-10	2.189E-10	2.138E-10	2.075E-10	1.637E-10	1.216E-10
Ra-226	U-238	3.196E-07	3.684E-18	1.090E-17	4.427E-17	8.246E-17	7.162E-16	3.424E-15	1.474E-13	4.707E-13
Ra-226	U-238	4.219E-13	4.863E-24	1.439E-23	5.844E-23	1.088E-22	9.454E-22	4.520E-21	1.946E-19	6.214E-19
Ra-226	U-238	6.073E-15	7.000E-26	2.071E-25	8.412E-25	1.567E-24	1.361E-23	6.506E-23	2.801E-21	8.944E-21
Ra-226	U-238	1.994E-04	2.299E-15	6.801E-15	2.763E-14	5.145E-14	4.469E-13	2.137E-12	9.199E-11	2.937E-10
Ra-226	U-238	2.633E-10	3.035E-21	8.977E-21	3.647E-20	6.792E-20	5.899E-19	2.820E-18	1.214E-16	3.877E-16
Ra-226	U-238	3.789E-12	4.368E-23	1.292E-22	5.249E-22	9.776E-22	8.491E-21	4.060E-20	1.748E-18	5.581E-18
Ra-226	∑DOSE(j)		1.669E-04	1.668E-04	1.664E-04	1.659E-04	1.620E-04	1.572E-04	1.240E-04	9.214E-05
Ra-226	Ra-226	3.795E-12	3.170E-12	3.168E-12	3.161E-12	3.151E-12	3.077E-12	2.987E-12	2.356E-12	1.751E-12
Ra-226	Ra-226	4.196E-08	7.383E-08	7.378E-08	7.361E-08	7.339E-08	7.167E-08	6.957E-08	5.484E-08	4.074E-08
Ra-226	∑DOSE(j)		7.383E-08	7.379E-08	7.361E-08	7.339E-08	7.167E-08	6.957E-08	5.485E-08	4.074E-08
Ra-226	Ra-226	5.538E-14	9.745E-14	9.740E-14	9.716E-14	9.688E-14	9.460E-14	9.183E-14	7.239E-14	5.378E-14
Ra-226	Ra-226	7.972E-16	1.403E-15	1.402E-15	1.399E-15	1.394E-15	1.362E-15	1.322E-15	1.042E-15	7.741E-16
Ra-226	∑DOSE(j)		9.886E-14	9.880E-14	9.856E-14	9.827E-14	9.596E-14	9.315E-14	7.344E-14	5.455E-14
Ra-226	Ra-226	2.000E-07	6.619E-08	6.615E-08	6.599E-08	6.580E-08	6.425E-08	6.238E-08	4.922E-08	3.662E-08
Ra-226	Ra-226	2.640E-13	8.737E-14	8.731E-14	8.711E-14	8.685E-14	8.482E-14	8.234E-14	6.498E-14	4.833E-14
Ra-226	U-238	3.200E-10	3.687E-21	1.090E-20	4.395E-20	8.010E-20	4.725E-19	1.723E-18	6.094E-17	1.932E-16
Ra-226	U-238	4.224E-16	4.866E-27	1.439E-26	5.802E-26	1.057E-25	6.237E-25	2.274E-24	8.044E-23	2.550E-22
Ra-226	U-238	6.080E-18	7.004E-29	2.070E-28	8.351E-28	1.521E-27	8.977E-27	3.273E-26	1.158E-24	3.670E-24
Ra-226	U-238	1.997E-07	2.300E-18	6.801E-18	2.743E-17	4.998E-17	2.948E-16	1.075E-15	3.802E-14	1.205E-13
Ra-226	U-238	2.636E-13	3.037E-24	8.978E-24	3.620E-23	6.597E-23	3.892E-22	1.419E-21	5.019E-20	1.591E-19
Ra-226	U-238	3.794E-15	4.371E-26	1.292E-25	5.211E-25	9.496E-25	5.602E-24	2.042E-23	7.225E-22	2.290E-21
Ra-226	∑DOSE(j)		6.619E-08	6.615E-08	6.599E-08	6.580E-08	6.425E-08	6.238E-08	4.922E-08	3.662E-08
Ra-226	Ra-226	3.800E-15	1.258E-15	1.257E-15	1.254E-15	1.250E-15	1.221E-15	1.185E-15	9.353E-16	6.957E-16

Summary : Perim Soil Add.3-Resident-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	9.915E-01	1.025E+00	1.123E+00	1.160E+00	1.581E-01	1.308E-02	2.866E-11	4.274E-22
U-238	U-238	5.450E-07	1.681E-08	2.111E-08	3.812E-08	5.892E-08	2.086E-07	1.829E-07	2.706E-08	2.459E-09
U-238	U-238	1.599E-03	5.315E-03	5.303E-03	5.260E-03	5.206E-03	4.819E-03	3.864E-03	5.827E-04	5.470E-05
U-238	∑DOSE(j)		5.315E-03	5.303E-03	5.260E-03	5.206E-03	4.819E-03	3.864E-03	5.828E-04	5.470E-05
U-234	U-238	1.599E-03	8.077E-11	2.949E-10	1.932E-09	5.692E-09	9.684E-08	1.690E-07	1.244E-07	2.258E-08
U-234	U-238	3.039E-11	1.535E-18	5.604E-18	3.671E-17	1.082E-16	1.840E-15	3.210E-15	2.364E-15	4.290E-16
U-234	U-238	3.359E-07	1.697E-14	6.195E-14	4.058E-13	1.196E-12	2.034E-11	3.549E-11	2.613E-11	4.743E-12
U-234	U-238	4.434E-13	2.240E-20	8.177E-20	5.356E-19	1.578E-18	2.685E-17	4.684E-17	3.449E-17	6.260E-18
U-234	U-238	6.383E-15	3.224E-22	1.177E-21	7.710E-21	2.272E-20	3.865E-19	6.743E-19	4.965E-19	9.011E-20
U-234	U-238	3.196E-07	1.614E-14	5.894E-14	3.861E-13	1.138E-12	1.935E-11	3.376E-11	2.486E-11	4.512E-12
U-234	U-238	4.219E-13	2.131E-20	7.780E-20	5.096E-19	1.502E-18	2.555E-17	4.457E-17	3.282E-17	5.956E-18
U-234	U-238	6.073E-15	3.067E-22	1.120E-21	7.335E-21	2.161E-20	3.677E-19	6.415E-19	4.724E-19	8.573E-20
U-234	U-238	6.713E-11	3.390E-18	1.238E-17	8.109E-17	2.389E-16	4.065E-15	7.092E-15	5.222E-15	9.478E-16
U-234	U-238	8.862E-17	4.475E-24	1.634E-23	1.070E-22	3.154E-22	5.366E-21	9.361E-21	6.893E-21	1.251E-21
U-234	U-238	1.276E-18	6.442E-26	2.352E-25	1.541E-24	4.540E-24	7.723E-23	1.347E-22	9.922E-23	1.801E-23
U-234	U-238	3.200E-10	1.616E-17	5.901E-17	3.865E-16	1.139E-15	1.938E-14	3.380E-14	2.489E-14	4.518E-15
U-234	U-238	4.224E-16	2.133E-23	7.789E-23	5.102E-22	1.503E-21	2.558E-20	4.462E-20	3.286E-20	5.964E-21
U-234	U-238	6.080E-18	3.071E-25	1.121E-24	7.344E-24	2.164E-23	3.681E-22	6.423E-22	4.729E-22	8.584E-23
U-234	U-238	9.980E-01	5.040E-08	1.840E-07	1.206E-06	3.552E-06	6.043E-05	1.054E-04	7.763E-05	1.409E-05
U-234	U-238	1.317E-06	6.653E-14	2.429E-13	1.591E-12	4.689E-12	7.976E-11	1.392E-10	1.025E-10	1.860E-11
U-234	U-238	1.896E-08	9.577E-16	3.497E-15	2.290E-14	6.749E-14	1.148E-12	2.003E-12	1.475E-12	2.677E-13
U-234	U-238	2.096E-04	1.059E-11	3.866E-11	2.532E-10	7.461E-10	1.269E-08	2.214E-08	1.631E-08	2.959E-09
U-234	U-238	2.767E-10	1.397E-17	5.103E-17	3.342E-16	9.848E-16	1.675E-14	2.923E-14	2.152E-14	3.907E-15
U-234	U-238	3.983E-12	2.011E-19	7.345E-19	4.811E-18	1.418E-17	2.412E-16	4.207E-16	3.098E-16	5.623E-17
U-234	U-238	1.994E-04	1.007E-11	3.678E-11	2.409E-10	7.098E-10	1.208E-08	2.107E-08	1.551E-08	2.816E-09
U-234	U-238	2.633E-10	1.330E-17	4.855E-17	3.180E-16	9.370E-16	1.594E-14	2.781E-14	2.048E-14	3.717E-15
U-234	U-238	3.789E-12	1.914E-19	6.988E-19	4.577E-18	1.349E-17	2.294E-16	4.003E-16	2.948E-16	5.350E-17
U-234	U-238	4.189E-08	2.116E-15	7.725E-15	5.060E-14	1.491E-13	2.536E-12	4.425E-12	3.259E-12	5.914E-13
U-234	U-238	5.530E-14	2.793E-21	1.020E-20	6.679E-20	1.968E-19	3.348E-18	5.841E-18	4.301E-18	7.807E-19
U-234	U-238	7.959E-16	4.020E-23	1.468E-22	9.614E-22	2.833E-21	4.819E-20	8.408E-20	6.191E-20	1.124E-20
U-234	U-238	1.997E-07	1.008E-14	3.682E-14	2.412E-13	7.107E-13	1.209E-11	2.109E-11	1.553E-11	2.819E-12
U-234	U-238	2.636E-13	1.331E-20	4.861E-20	3.184E-19	9.381E-19	1.596E-17	2.784E-17	2.050E-17	3.721E-18
U-234	U-238	3.794E-15	1.916E-22	6.996E-22	4.583E-21	1.350E-20	2.297E-19	4.008E-19	2.951E-19	5.356E-20
U-234	∑DOSE(j)		5.050E-08	1.844E-07	1.208E-06	3.559E-06	6.055E-05	1.056E-04	7.779E-05	1.412E-05
Th-230	U-238	1.599E-03	6.217E-16	3.704E-15	4.326E-14	1.516E-13	3.051E-12	1.036E-11	8.534E-11	1.181E-10
Th-230	U-238	3.039E-11	1.181E-23	7.038E-23	8.219E-22	2.881E-21	5.796E-20	1.969E-19	1.622E-18	2.243E-18
Th-230	U-238	3.359E-07	1.306E-19	7.780E-19	9.086E-18	3.185E-17	6.407E-16	2.176E-15	1.793E-14	2.480E-14
Th-230	U-238	4.434E-13	1.724E-25	1.027E-24	1.199E-23	4.204E-23	8.458E-22	2.873E-21	2.366E-20	3.273E-20
Th-230	U-238	6.383E-15	2.481E-27	1.478E-26	1.726E-25	6.051E-25	1.217E-23	4.135E-23	3.406E-22	4.711E-22
Th-230	U-238	3.196E-07	1.242E-19	7.402E-19	8.644E-18	3.030E-17	6.096E-16	2.070E-15	1.705E-14	2.359E-14
Th-230	U-238	4.219E-13	1.640E-25	9.771E-25	1.141E-23	4.000E-23	8.047E-22	2.733E-21	2.251E-20	3.114E-20
Th-230	U-238	6.073E-15	2.361E-27	1.406E-26	1.642E-25	5.757E-25	1.158E-23	3.934E-23	3.240E-22	4.483E-22
Th-230	U-238	6.713E-11	2.610E-23	1.555E-22	1.816E-21	6.364E-21	1.280E-19	4.349E-19	3.582E-18	4.955E-18
Th-230	U-238	8.862E-17	3.381E-29	2.052E-28	2.397E-27	8.401E-27	1.690E-25	5.741E-25	4.729E-24	6.541E-24
Th-230	U-238	1.276E-18	0.000E+00	2.450E-30	3.413E-29	1.205E-28	2.433E-27	8.263E-27	6.806E-26	9.415E-26
Th-230	U-238	3.200E-10	1.244E-22	7.411E-22	8.655E-21	3.034E-20	6.104E-19	2.073E-18	1.708E-17	2.362E-17

Summary : Perim Soil Add.3-Resident-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	1.642E-28	9.783E-28	1.142E-26	4.004E-26	8.057E-25	2.736E-24	2.254E-23	3.118E-23
Th-230	U-238	6.080E-18	1.333E-30	1.388E-29	1.644E-28	5.764E-28	1.160E-26	3.939E-26	3.244E-25	4.488E-25
Th-230	U-238	9.980E-01	3.880E-13	2.311E-12	2.699E-11	9.461E-11	1.904E-09	6.465E-09	5.325E-08	7.367E-08
Th-230	U-238	1.317E-06	5.121E-19	3.051E-18	3.563E-17	1.249E-16	2.513E-15	8.534E-15	7.030E-14	9.724E-14
Th-230	U-238	1.896E-08	7.371E-21	4.391E-20	5.128E-19	1.798E-18	3.617E-17	1.228E-16	1.012E-15	1.400E-15
Th-230	U-238	2.096E-04	8.149E-17	4.855E-16	5.669E-15	1.987E-14	3.998E-13	1.358E-12	1.119E-11	1.547E-11
Th-230	U-238	2.767E-10	1.076E-22	6.408E-22	7.484E-21	2.623E-20	5.278E-19	1.793E-18	1.477E-17	2.042E-17
Th-230	U-238	3.983E-12	1.548E-24	9.224E-24	1.077E-22	3.776E-22	7.597E-21	2.580E-20	2.125E-19	2.940E-19
Th-230	U-238	1.994E-04	7.753E-17	4.619E-16	5.394E-15	1.891E-14	3.804E-13	1.292E-12	1.064E-11	1.472E-11
Th-230	U-238	2.633E-10	1.023E-22	6.097E-22	7.120E-21	2.496E-20	5.021E-19	1.705E-18	1.405E-17	1.943E-17
Th-230	U-238	3.789E-12	1.473E-24	8.776E-24	1.025E-22	3.592E-22	7.228E-21	2.455E-20	2.022E-19	2.797E-19
Th-230	U-238	4.189E-08	1.629E-20	9.702E-20	1.133E-18	3.971E-18	7.990E-17	2.714E-16	2.235E-15	3.092E-15
Th-230	U-238	5.530E-14	2.150E-26	1.281E-25	1.496E-24	5.242E-24	1.055E-22	3.582E-22	2.951E-21	4.082E-21
Th-230	U-238	7.959E-16	3.094E-28	1.843E-27	2.153E-26	7.546E-26	1.518E-24	5.156E-24	4.247E-23	5.875E-23
Th-230	U-238	1.997E-07	7.763E-20	4.625E-19	5.401E-18	1.893E-17	3.809E-16	1.294E-15	1.066E-14	1.474E-14
Th-230	U-238	2.636E-13	1.025E-25	6.104E-25	7.129E-24	2.499E-23	5.027E-22	1.707E-21	1.406E-20	1.946E-20
Th-230	U-238	3.794E-15	1.475E-27	8.787E-27	1.026E-25	3.597E-25	7.236E-24	2.458E-23	2.024E-22	2.801E-22
Th-230	∑DOSE(j)		3.888E-13	2.316E-12	2.705E-11	9.480E-11	1.907E-09	6.478E-09	5.336E-08	7.382E-08
U-238	U-238	2.111E-09	7.015E-09	7.001E-09	6.943E-09	6.872E-09	6.361E-09	5.100E-09	7.692E-10	7.220E-11
U-238	U-238	3.039E-11	1.010E-10	1.008E-10	9.993E-11	9.891E-11	9.157E-11	7.341E-11	1.107E-11	1.039E-12
U-238	∑DOSE(j)		7.116E-09	7.101E-09	7.043E-09	6.971E-09	6.453E-09	5.174E-09	7.803E-10	7.324E-11
U-234	U-238	2.111E-09	1.066E-16	3.893E-16	2.550E-15	7.514E-15	1.278E-13	2.230E-13	1.642E-13	2.981E-14
Th-230	U-238	2.111E-09	8.207E-22	4.889E-21	5.710E-20	2.001E-19	4.027E-18	1.368E-17	1.127E-16	1.558E-16
U-238	U-238	3.359E-07	1.116E-06	1.114E-06	1.105E-06	1.093E-06	1.012E-06	8.116E-07	1.224E-07	1.149E-08
U-238	U-238	4.434E-13	1.474E-12	1.470E-12	1.458E-12	1.443E-12	1.336E-12	1.071E-12	1.616E-13	1.517E-14
U-238	∑DOSE(j)		1.116E-06	1.114E-06	1.105E-06	1.094E-06	1.012E-06	8.116E-07	1.224E-07	1.149E-08
Ra-226	U-238	3.359E-07	3.875E-18	1.148E-17	4.729E-17	9.174E-17	1.259E-15	7.130E-15	3.343E-13	1.071E-12
Ra-226	U-238	4.434E-13	5.115E-24	1.515E-23	6.243E-23	1.211E-22	1.662E-21	9.412E-21	4.413E-19	1.413E-18
Ra-226	U-238	6.383E-15	7.363E-26	2.181E-25	8.986E-25	1.743E-24	2.392E-23	1.355E-22	6.352E-21	2.034E-20
Ra-226	U-238	2.096E-04	2.418E-15	7.162E-15	2.951E-14	5.725E-14	7.856E-13	4.449E-12	2.086E-10	6.680E-10
Ra-226	U-238	2.767E-10	3.192E-21	9.454E-21	3.896E-20	7.557E-20	1.037E-18	5.873E-18	2.754E-16	8.818E-16
Ra-226	U-238	3.983E-12	4.594E-23	1.361E-22	5.607E-22	1.088E-21	1.493E-20	8.453E-20	3.964E-18	1.269E-17
Ra-226	∑DOSE(j)		2.422E-15	7.174E-15	2.956E-14	5.734E-14	7.869E-13	4.456E-12	2.090E-10	6.691E-10
U-238	U-238	6.383E-15	2.121E-14	2.117E-14	2.099E-14	2.078E-14	1.923E-14	1.542E-14	2.326E-15	2.183E-16
U-238	U-238	3.196E-07	1.062E-06	1.060E-06	1.051E-06	1.040E-06	9.631E-07	7.722E-07	1.165E-07	1.093E-08
U-238	∑DOSE(j)		1.062E-06	1.060E-06	1.051E-06	1.040E-06	9.631E-07	7.722E-07	1.165E-07	1.093E-08
U-238	U-238	4.219E-13	1.402E-12	1.399E-12	1.387E-12	1.373E-12	1.271E-12	1.019E-12	1.537E-13	1.443E-14
U-238	U-238	6.073E-15	2.018E-14	2.014E-14	1.997E-14	1.977E-14	1.830E-14	1.467E-14	2.213E-15	2.077E-16
U-238	∑DOSE(j)		1.422E-12	1.419E-12	1.407E-12	1.393E-12	1.290E-12	1.034E-12	1.559E-13	1.464E-14
U-238	U-238	6.713E-11	2.231E-10	2.226E-10	2.208E-10	2.185E-10	2.023E-10	1.622E-10	2.446E-11	2.296E-12
U-238	U-238	8.862E-17	2.945E-16	2.939E-16	2.914E-16	2.885E-16	2.670E-16	2.141E-16	3.229E-17	3.031E-18
U-238	∑DOSE(j)		2.231E-10	2.226E-10	2.208E-10	2.185E-10	2.023E-10	1.622E-10	2.446E-11	2.296E-12

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	7.740E-22	2.292E-21	9.436E-21	1.825E-20	2.444E-19	1.375E-18	6.428E-17	2.058E-16
Ra-226	U-238	8.862E-17	1.021E-27	3.026E-27	1.246E-26	2.410E-26	3.226E-25	1.815E-24	8.485E-23	2.717E-22
Ra-226	U-238	1.276E-18	1.470E-29	4.344E-29	1.793E-28	3.468E-28	4.644E-27	2.612E-26	1.221E-24	3.911E-24
Ra-226	U-238	4.189E-08	4.830E-19	1.430E-18	5.888E-18	1.139E-17	1.525E-16	8.580E-16	4.011E-14	1.284E-13
Ra-226	U-238	5.530E-14	6.376E-25	1.888E-24	7.773E-24	1.504E-23	2.013E-22	1.133E-21	5.295E-20	1.695E-19
Ra-226	U-238	7.959E-16	9.177E-27	2.718E-26	1.119E-25	2.164E-25	2.898E-24	1.630E-23	7.621E-22	2.440E-21
Ra-226	∑DOSE(j)		4.838E-19	1.433E-18	5.898E-18	1.141E-17	1.528E-16	8.594E-16	4.018E-14	1.286E-13
U-238	U-238	1.276E-18	4.239E-18	4.230E-18	4.195E-18	4.152E-18	3.844E-18	3.082E-18	4.648E-19	4.362E-20
U-238	U-238	3.200E-10	1.063E-09	1.061E-09	1.052E-09	1.042E-09	9.643E-10	7.731E-10	1.166E-10	1.094E-11
U-238	∑DOSE(j)		1.063E-09	1.061E-09	1.052E-09	1.042E-09	9.643E-10	7.731E-10	1.166E-10	1.094E-11
U-238	U-238	4.224E-16	1.404E-15	1.401E-15	1.389E-15	1.375E-15	1.273E-15	1.020E-15	1.539E-16	1.445E-17
U-238	U-238	6.080E-18	2.020E-17	2.016E-17	1.999E-17	1.979E-17	1.832E-17	1.469E-17	2.215E-18	2.079E-19
U-238	∑DOSE(j)		1.424E-15	1.421E-15	1.409E-15	1.395E-15	1.291E-15	1.035E-15	1.561E-16	1.465E-17
U-238	U-238	9.980E-01	9.145E-02	9.964E-02	1.321E-01	1.717E-01	4.571E-01	3.967E-01	5.882E-02	5.364E-03
U-238	U-238	1.317E-06	1.207E-07	1.315E-07	1.743E-07	2.267E-07	6.033E-07	5.237E-07	7.764E-08	7.080E-09
U-238	∑DOSE(j)		9.145E-02	9.964E-02	1.321E-01	1.717E-01	4.571E-01	3.967E-01	5.882E-02	5.364E-03
U-238	U-238	1.896E-08	1.738E-09	1.893E-09	2.509E-09	3.262E-09	8.684E-09	7.538E-09	1.118E-09	1.019E-10
U-238	U-238	2.096E-04	1.921E-05	2.093E-05	2.774E-05	3.607E-05	9.600E-05	8.333E-05	1.235E-05	1.127E-06
U-238	∑DOSE(j)		1.921E-05	2.093E-05	2.774E-05	3.607E-05	9.601E-05	8.334E-05	1.236E-05	1.127E-06
U-238	U-238	2.767E-10	2.536E-11	2.763E-11	3.661E-11	4.761E-11	1.267E-10	1.100E-10	1.631E-11	1.487E-12
U-238	U-238	3.983E-12	3.650E-13	3.977E-13	5.270E-13	6.853E-13	1.824E-12	1.583E-12	2.347E-13	2.141E-14
U-238	∑DOSE(j)		2.572E-11	2.802E-11	3.714E-11	4.829E-11	1.285E-10	1.116E-10	1.654E-11	1.509E-12
U-238	U-238	1.994E-04	1.828E-05	1.991E-05	2.639E-05	3.431E-05	9.134E-05	7.928E-05	1.175E-05	1.072E-06
U-238	U-238	2.633E-10	2.412E-11	2.629E-11	3.483E-11	4.529E-11	1.206E-10	1.047E-10	1.552E-11	1.415E-12
U-238	∑DOSE(j)		1.828E-05	1.991E-05	2.639E-05	3.431E-05	9.134E-05	7.928E-05	1.175E-05	1.072E-06
U-238	U-238	3.789E-12	3.472E-13	3.783E-13	5.014E-13	6.520E-13	1.735E-12	1.506E-12	2.233E-13	2.037E-14
U-238	U-238	4.189E-08	3.839E-09	4.183E-09	5.543E-09	7.208E-09	1.919E-08	1.665E-08	2.469E-09	2.251E-10
U-238	∑DOSE(j)		3.839E-09	4.183E-09	5.544E-09	7.208E-09	1.919E-08	1.665E-08	2.469E-09	2.252E-10
U-238	U-238	5.530E-14	5.067E-15	5.521E-15	7.317E-15	9.514E-15	2.532E-14	2.198E-14	3.259E-15	2.972E-16
U-238	U-238	7.959E-16	7.293E-17	7.947E-17	1.053E-16	1.369E-16	3.645E-16	3.164E-16	4.691E-17	4.278E-18
U-238	∑DOSE(j)		5.140E-15	5.600E-15	7.422E-15	9.651E-15	2.569E-14	2.230E-14	3.306E-15	3.015E-16
U-238	U-238	1.997E-07	1.830E-08	1.994E-08	2.642E-08	3.436E-08	9.145E-08	7.938E-08	1.177E-08	1.073E-09
U-238	U-238	2.636E-13	2.415E-14	2.632E-14	3.488E-14	4.535E-14	1.207E-13	1.048E-13	1.553E-14	1.417E-15
U-238	∑DOSE(j)		1.830E-08	1.994E-08	2.642E-08	3.436E-08	9.145E-08	7.938E-08	1.177E-08	1.073E-09
U-238	U-238	3.794E-15	3.477E-16	3.788E-16	5.020E-16	6.528E-16	1.738E-15	1.508E-15	2.236E-16	2.039E-17

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

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
		t=	0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.330E+00	1.299E+00	1.184E+00	1.054E+00	4.156E-01	1.298E-01	1.180E-05	1.046E-10
Ra-226	Ra-226	9.996E-01	8.996E-02	8.991E-02	8.970E-02	8.943E-02	8.733E-02	8.477E-02	6.681E-02	4.962E-02
Ra-226	Ra-226	1.319E-06	1.188E-07	1.187E-07	1.184E-07	1.180E-07	1.153E-07	1.119E-07	8.819E-08	6.550E-08
Ra-226	U-238	1.599E-03	0.000E+00	1.914E-18	2.369E-16	1.871E-15	2.118E-13	1.500E-12	7.711E-11	2.478E-10
Ra-226	U-238	2.111E-09	0.000E+00	2.526E-24	3.126E-22	2.470E-21	2.796E-19	1.980E-18	1.018E-16	3.271E-16
Ra-226	U-238	3.039E-11	0.000E+00	3.636E-26	4.500E-24	3.555E-23	4.024E-21	2.850E-20	1.465E-18	4.709E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.194E-15	1.478E-13	1.168E-12	1.322E-10	9.359E-10	4.812E-08	1.546E-07
Ra-226	U-238	1.317E-06	0.000E+00	1.576E-21	1.951E-19	1.541E-18	1.744E-16	1.235E-15	6.351E-14	2.041E-13
Ra-226	U-238	1.896E-08	0.000E+00	2.269E-23	2.808E-21	2.219E-20	2.511E-18	1.778E-17	9.142E-16	2.938E-15
Ra-226	∑S(j):		8.996E-02	8.991E-02	8.970E-02	8.943E-02	8.733E-02	8.477E-02	6.681E-02	4.962E-02
Pb-210	Ra-226	9.996E-01	0.000E+00	2.764E-03	1.296E-02	2.396E-02	6.872E-02	8.056E-02	6.636E-02	4.928E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	5.805E-07	2.722E-06	5.033E-06	1.443E-05	1.692E-05	1.394E-05	1.035E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	5.523E-07	2.589E-06	4.788E-06	1.373E-05	1.610E-05	1.326E-05	9.848E-06
Pb-210	Ra-226	4.196E-08	0.000E+00	1.160E-10	5.439E-10	1.006E-09	2.885E-09	3.382E-09	2.785E-09	2.069E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	5.529E-10	2.593E-09	4.794E-09	1.375E-08	1.612E-08	1.328E-08	9.860E-09
Pb-210	U-238	1.599E-03	0.000E+00	1.485E-20	8.978E-18	1.378E-16	6.317E-14	7.149E-13	6.625E-11	2.312E-10
Pb-210	U-238	3.359E-07	0.000E+00	3.120E-24	1.886E-21	2.895E-20	1.327E-17	1.502E-16	1.392E-14	4.855E-14
Pb-210	U-238	3.196E-07	0.000E+00	2.968E-24	1.794E-21	2.755E-20	1.262E-17	1.429E-16	1.324E-14	4.620E-14
Pb-210	U-238	6.713E-11	0.000E+00	6.234E-28	3.768E-25	5.786E-24	2.652E-21	3.001E-20	2.781E-18	9.703E-18
Pb-210	U-238	3.200E-10	0.000E+00	2.972E-27	1.796E-24	2.758E-23	1.264E-20	1.430E-19	1.326E-17	4.625E-17
Pb-210	U-238	9.980E-01	0.000E+00	9.268E-18	5.602E-15	8.602E-14	3.942E-11	4.461E-10	4.134E-08	1.442E-07
Pb-210	U-238	2.096E-04	0.000E+00	1.947E-21	1.177E-18	1.807E-17	8.280E-15	9.370E-14	8.683E-12	3.030E-11
Pb-210	U-238	1.994E-04	0.000E+00	1.852E-21	1.120E-18	1.719E-17	7.878E-15	8.915E-14	8.261E-12	2.883E-11
Pb-210	U-238	4.189E-08	0.000E+00	3.890E-25	2.351E-22	3.611E-21	1.655E-18	1.873E-17	1.735E-15	6.055E-15
Pb-210	U-238	1.997E-07	0.000E+00	1.854E-24	1.121E-21	1.721E-20	7.887E-18	8.926E-17	8.271E-15	2.886E-14
Pb-210	∑S(j):		0.000E+00	2.765E-03	1.296E-02	2.397E-02	6.875E-02	8.059E-02	6.639E-02	4.930E-02
Pb-210	Ra-226	1.319E-06	0.000E+00	3.648E-09	1.710E-08	3.163E-08	9.071E-08	1.063E-07	8.759E-08	6.505E-08
Pb-210	Ra-226	1.899E-08	0.000E+00	5.251E-11	2.462E-10	4.552E-10	1.306E-09	1.531E-09	1.261E-09	9.364E-10
Pb-210	Ra-226	2.771E-10	0.000E+00	7.662E-13	3.593E-12	6.643E-12	1.905E-11	2.234E-11	1.840E-11	1.366E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	7.290E-13	3.418E-12	6.320E-12	1.813E-11	2.125E-11	1.750E-11	1.300E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.531E-16	7.180E-16	1.328E-15	3.808E-15	4.464E-15	3.677E-15	2.731E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	7.299E-16	3.422E-15	6.328E-15	1.815E-14	2.128E-14	1.753E-14	1.302E-14
Pb-210	U-238	2.111E-09	0.000E+00	1.960E-26	1.185E-23	1.820E-22	8.339E-20	9.437E-19	8.745E-17	3.051E-16
Pb-210	U-238	4.434E-13	0.000E+00	4.118E-30	2.489E-27	3.822E-26	1.752E-23	1.982E-22	1.837E-20	6.409E-20
Pb-210	U-238	4.219E-13	0.000E+00	3.918E-30	2.368E-27	3.636E-26	1.666E-23	1.886E-22	1.748E-20	6.098E-20
Pb-210	U-238	8.862E-17	0.000E+00	8.229E-34	4.974E-31	7.638E-30	3.500E-27	3.961E-26	3.671E-24	1.281E-23
Pb-210	U-238	4.224E-16	0.000E+00	3.923E-33	2.371E-30	3.641E-29	1.668E-26	1.888E-25	1.750E-23	6.105E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.223E-23	7.395E-21	1.135E-19	5.203E-17	5.889E-16	5.457E-14	1.904E-13
Pb-210	U-238	2.767E-10	0.000E+00	2.570E-27	1.553E-24	2.385E-23	1.093E-20	1.237E-19	1.146E-17	3.999E-17
Pb-210	U-238	2.633E-10	0.000E+00	2.445E-27	1.478E-24	2.269E-23	1.040E-20	1.177E-19	1.090E-17	3.805E-17
Pb-210	U-238	5.530E-14	0.000E+00	5.135E-31	3.104E-28	4.766E-27	2.184E-24	2.472E-23	2.291E-21	7.992E-21
Pb-210	U-238	2.636E-13	0.000E+00	2.448E-30	1.480E-27	2.272E-26	1.041E-23	1.178E-22	1.092E-20	3.810E-20
Pb-210	∑S(j):		0.000E+00	3.702E-09	1.736E-08	3.209E-08	9.206E-08	1.079E-07	8.889E-08	6.602E-08
Ra-226	Ra-226	1.899E-08	1.709E-09	1.708E-09	1.704E-09	1.699E-09	1.659E-09	1.611E-09	1.269E-09	9.427E-10
Ra-226	Ra-226	2.100E-04	1.890E-05	1.888E-05	1.884E-05	1.878E-05	1.834E-05	1.780E-05	1.403E-05	1.042E-05
Ra-226	∑S(j):		1.890E-05	1.889E-05	1.884E-05	1.879E-05	1.834E-05	1.781E-05	1.403E-05	1.042E-05

Summary : Perim Soil Add.3-Resident-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	2.494E-11	2.493E-11	2.487E-11	2.480E-11	2.421E-11	2.350E-11	1.852E-11	1.376E-11
Ra-226	Ra-226	3.989E-12	3.590E-13	3.588E-13	3.580E-13	3.569E-13	3.485E-13	3.383E-13	2.666E-13	1.980E-13
Ra-226	∑S(j):		2.530E-11	2.529E-11	2.523E-11	2.515E-11	2.456E-11	2.384E-11	1.879E-11	1.396E-11
Pb-210	Ra-226	3.989E-12	0.000E+00	1.103E-14	5.171E-14	9.562E-14	2.743E-13	3.215E-13	2.648E-13	1.967E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.049E-14	4.920E-14	9.097E-14	2.609E-13	3.059E-13	2.520E-13	1.871E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.204E-18	1.033E-17	1.911E-17	5.481E-17	6.425E-17	5.292E-17	3.930E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.051E-17	4.926E-17	9.108E-17	2.612E-16	3.063E-16	2.523E-16	1.873E-16
Pb-210	U-238	3.039E-11	0.000E+00	2.822E-28	1.706E-25	2.619E-24	1.200E-21	1.358E-20	1.259E-18	4.392E-18
Pb-210	U-238	6.383E-15	0.000E+00	5.927E-32	3.583E-29	5.501E-28	2.521E-25	2.853E-24	2.644E-22	9.225E-22
Pb-210	U-238	6.073E-15	0.000E+00	5.639E-32	3.409E-29	5.234E-28	2.399E-25	2.715E-24	2.515E-22	8.777E-22
Pb-210	U-238	1.276E-18	0.000E+00	1.184E-35	7.160E-33	1.099E-31	5.038E-29	5.702E-28	5.284E-26	1.844E-25
Pb-210	U-238	6.080E-18	0.000E+00	5.646E-35	3.413E-32	5.240E-31	2.402E-28	2.718E-27	2.518E-25	8.788E-25
Pb-210	U-238	1.896E-08	0.000E+00	1.761E-25	1.064E-22	1.634E-21	7.490E-19	8.476E-18	7.854E-16	2.741E-15
Pb-210	U-238	3.983E-12	0.000E+00	3.699E-29	2.236E-26	3.433E-25	1.573E-22	1.780E-21	1.650E-19	5.757E-19
Pb-210	U-238	3.789E-12	0.000E+00	3.519E-29	2.127E-26	3.266E-25	1.497E-22	1.694E-21	1.570E-19	5.477E-19
Pb-210	U-238	7.959E-16	0.000E+00	7.391E-33	4.468E-30	6.860E-29	3.144E-26	3.558E-25	3.297E-23	1.150E-22
Pb-210	U-238	3.794E-15	0.000E+00	3.523E-32	2.130E-29	3.270E-28	1.499E-25	1.696E-24	1.572E-22	5.484E-22
Pb-210	∑S(j):		0.000E+00	2.153E-14	1.010E-13	1.867E-13	5.355E-13	6.278E-13	5.179E-13	3.868E-13
Ra-226	Ra-226	1.998E-04	1.798E-05	1.797E-05	1.792E-05	1.787E-05	1.745E-05	1.694E-05	1.335E-05	9.916E-06
Ra-226	Ra-226	2.637E-10	2.373E-11	2.372E-11	2.366E-11	2.359E-11	2.304E-11	2.236E-11	1.762E-11	1.309E-11
Ra-226	U-238	3.196E-07	0.000E+00	3.825E-22	4.733E-20	3.739E-19	4.232E-17	2.997E-16	1.541E-14	4.953E-14
Ra-226	U-238	4.219E-13	0.000E+00	5.049E-28	6.248E-26	4.936E-25	5.587E-23	3.956E-22	2.034E-20	6.537E-20
Ra-226	U-238	6.073E-15	0.000E+00	7.267E-30	8.993E-28	7.105E-27	8.042E-25	5.695E-24	2.928E-22	9.410E-22
Ra-226	U-238	1.994E-04	0.000E+00	2.387E-19	2.954E-17	2.333E-16	2.641E-14	1.870E-13	9.616E-12	3.090E-11
Ra-226	U-238	2.633E-10	0.000E+00	3.150E-25	3.899E-23	3.080E-22	3.486E-20	2.469E-19	1.269E-17	4.079E-17
Ra-226	U-238	3.789E-12	0.000E+00	4.535E-27	5.612E-25	4.434E-24	5.018E-22	3.554E-21	1.827E-19	5.872E-19
Ra-226	∑S(j):		1.798E-05	1.797E-05	1.792E-05	1.787E-05	1.745E-05	1.694E-05	1.335E-05	9.916E-06
Ra-226	Ra-226	3.795E-12	3.416E-13	3.414E-13	3.406E-13	3.396E-13	3.316E-13	3.219E-13	2.537E-13	1.884E-13
Ra-226	Ra-226	4.196E-08	3.776E-09	3.774E-09	3.765E-09	3.754E-09	3.666E-09	3.558E-09	2.804E-09	2.083E-09
Ra-226	∑S(j):		3.777E-09	3.774E-09	3.765E-09	3.754E-09	3.666E-09	3.558E-09	2.805E-09	2.083E-09
Ra-226	Ra-226	5.538E-14	4.985E-15	4.982E-15	4.970E-15	4.955E-15	4.838E-15	4.697E-15	3.702E-15	2.749E-15
Ra-226	Ra-226	7.972E-16	7.175E-17	7.171E-17	7.154E-17	7.132E-17	6.964E-17	6.760E-17	5.328E-17	3.957E-17
Ra-226	∑S(j):		5.056E-15	5.053E-15	5.041E-15	5.026E-15	4.908E-15	4.764E-15	3.755E-15	2.789E-15
Ra-226	Ra-226	2.000E-07	1.800E-08	1.799E-08	1.795E-08	1.789E-08	1.747E-08	1.696E-08	1.337E-08	9.928E-09
Ra-226	Ra-226	2.640E-13	2.376E-14	2.375E-14	2.369E-14	2.362E-14	2.306E-14	2.239E-14	1.765E-14	1.310E-14
Ra-226	U-238	3.200E-10	0.000E+00	3.829E-25	4.739E-23	3.744E-22	4.238E-20	3.001E-19	1.543E-17	4.959E-17
Ra-226	U-238	4.224E-16	0.000E+00	5.055E-31	6.255E-29	4.942E-28	5.594E-26	3.961E-25	2.037E-23	6.545E-23
Ra-226	U-238	6.080E-18	0.000E+00	7.276E-33	9.004E-31	7.114E-30	8.051E-28	5.702E-27	2.931E-25	9.421E-25
Ra-226	U-238	1.997E-07	0.000E+00	2.390E-22	2.957E-20	2.336E-19	2.644E-17	1.873E-16	9.627E-15	3.094E-14
Ra-226	U-238	2.636E-13	0.000E+00	3.154E-28	3.903E-26	3.084E-25	3.490E-23	2.472E-22	1.271E-20	4.084E-20
Ra-226	U-238	3.794E-15	0.000E+00	4.540E-30	5.619E-28	4.439E-27	5.024E-25	3.558E-24	1.829E-22	5.879E-22
Ra-226	∑S(j):		1.800E-08	1.799E-08	1.795E-08	1.789E-08	1.747E-08	1.696E-08	1.337E-08	9.928E-09
Ra-226	Ra-226	3.800E-15	3.420E-16	3.418E-16	3.410E-16	3.400E-16	3.320E-16	3.222E-16	2.540E-16	1.886E-16

Summary : Perim Soil Add.3-Resident-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	3.300E-01	3.140E-01	2.572E-01	2.005E-01	2.734E-02	2.265E-03	5.030E-12	7.667E-23
U-238	U-238	5.450E-07	3.488E-07	3.472E-07	3.407E-07	3.327E-07	2.755E-07	2.175E-07	3.292E-08	3.107E-09
U-238	U-238	1.599E-03	1.024E-03	1.019E-03	9.997E-04	9.764E-04	8.084E-04	6.384E-04	9.661E-05	9.119E-06
U-238	∑S(j):		1.024E-03	1.019E-03	1.000E-03	9.767E-04	8.086E-04	6.386E-04	9.664E-05	9.122E-06
U-234	U-238	1.599E-03	0.000E+00	2.876E-09	1.411E-08	2.757E-08	1.141E-07	1.802E-07	1.363E-07	2.571E-08
U-234	U-238	3.039E-11	0.000E+00	5.465E-17	2.681E-16	5.238E-16	2.168E-15	3.424E-15	2.590E-15	4.885E-16
U-234	U-238	3.359E-07	0.000E+00	6.042E-13	2.964E-12	5.790E-12	2.397E-11	3.786E-11	2.863E-11	5.400E-12
U-234	U-238	4.434E-13	0.000E+00	7.975E-19	3.913E-18	7.643E-18	3.164E-17	4.997E-17	3.779E-17	7.128E-18
U-234	U-238	6.383E-15	0.000E+00	1.148E-20	5.632E-20	1.100E-19	4.554E-19	7.192E-19	5.439E-19	1.026E-19
U-234	U-238	3.196E-07	0.000E+00	5.748E-13	2.820E-12	5.509E-12	2.280E-11	3.602E-11	2.724E-11	5.138E-12
U-234	U-238	4.219E-13	0.000E+00	7.588E-19	3.723E-18	7.272E-18	3.010E-17	4.754E-17	3.595E-17	6.782E-18
U-234	U-238	6.073E-15	0.000E+00	1.092E-20	5.359E-20	1.047E-19	4.333E-19	6.843E-19	5.175E-19	9.762E-20
U-234	U-238	6.713E-11	0.000E+00	1.207E-16	5.924E-16	1.157E-15	4.790E-15	7.565E-15	5.721E-15	1.079E-15
U-234	U-238	8.862E-17	0.000E+00	1.594E-22	7.819E-22	1.527E-21	6.323E-21	9.986E-21	7.551E-21	1.424E-21
U-234	U-238	1.276E-18	0.000E+00	2.294E-24	1.126E-23	2.199E-23	9.101E-23	1.437E-22	1.087E-22	2.050E-23
U-234	U-238	3.200E-10	0.000E+00	5.755E-16	2.824E-15	5.516E-15	2.283E-14	3.606E-14	2.727E-14	5.144E-15
U-234	U-238	4.224E-16	0.000E+00	7.597E-22	3.727E-21	7.281E-21	3.014E-20	4.760E-20	3.600E-20	6.790E-21
U-234	U-238	6.080E-18	0.000E+00	1.093E-23	5.365E-23	1.048E-22	4.338E-22	6.851E-22	5.181E-22	9.774E-23
U-234	U-238	9.980E-01	0.000E+00	1.795E-06	8.806E-06	1.720E-05	7.120E-05	1.125E-04	8.505E-05	1.604E-05
U-234	U-238	1.317E-06	0.000E+00	2.369E-12	1.162E-11	2.271E-11	9.399E-11	1.484E-10	1.123E-10	2.118E-11
U-234	U-238	1.896E-08	0.000E+00	3.410E-14	1.673E-13	3.268E-13	1.353E-12	2.137E-12	1.616E-12	3.048E-13
U-234	U-238	2.096E-04	0.000E+00	3.770E-10	1.850E-09	3.613E-09	1.496E-08	2.362E-08	1.786E-08	3.370E-09
U-234	U-238	2.767E-10	0.000E+00	4.976E-16	2.442E-15	4.769E-15	1.974E-14	3.118E-14	2.358E-14	4.448E-15
U-234	U-238	3.983E-12	0.000E+00	7.163E-18	3.514E-17	6.865E-17	2.842E-16	4.488E-16	3.394E-16	6.402E-17
U-234	U-238	1.994E-04	0.000E+00	3.587E-10	1.760E-09	3.438E-09	1.423E-08	2.247E-08	1.700E-08	3.206E-09
U-234	U-238	2.633E-10	0.000E+00	4.735E-16	2.323E-15	4.538E-15	1.878E-14	2.967E-14	2.243E-14	4.232E-15
U-234	U-238	3.789E-12	0.000E+00	6.815E-18	3.344E-17	6.531E-17	2.704E-16	4.270E-16	3.229E-16	6.091E-17
U-234	U-238	4.189E-08	0.000E+00	7.534E-14	3.696E-13	7.220E-13	2.989E-12	4.721E-12	3.570E-12	6.734E-13
U-234	U-238	5.530E-14	0.000E+00	9.945E-20	4.879E-19	9.531E-19	3.945E-18	6.231E-18	4.712E-18	8.889E-19
U-234	U-238	7.959E-16	0.000E+00	1.431E-21	7.023E-21	1.372E-20	5.679E-20	8.969E-20	6.783E-20	1.279E-20
U-234	U-238	1.997E-07	0.000E+00	3.591E-13	1.762E-12	3.442E-12	1.425E-11	2.250E-11	1.702E-11	3.210E-12
U-234	U-238	2.636E-13	0.000E+00	4.740E-19	2.326E-18	4.543E-18	1.881E-17	2.970E-17	2.246E-17	4.237E-18
U-234	U-238	3.794E-15	0.000E+00	6.823E-21	3.348E-20	6.539E-20	2.707E-19	4.275E-19	3.233E-19	6.099E-20
U-234	∑S(j):		0.000E+00	1.798E-06	8.824E-06	1.724E-05	7.135E-05	1.127E-04	8.522E-05	1.608E-05
Th-230	U-238	1.599E-03	0.000E+00	1.325E-14	3.270E-13	1.288E-12	2.842E-11	9.756E-11	8.119E-10	1.124E-09
Th-230	U-238	3.039E-11	0.000E+00	2.517E-22	6.213E-21	2.446E-20	5.400E-19	1.854E-18	1.543E-17	2.135E-17
Th-230	U-238	3.359E-07	0.000E+00	2.782E-18	6.868E-17	2.704E-16	5.969E-15	2.049E-14	1.705E-13	2.360E-13
Th-230	U-238	4.434E-13	0.000E+00	3.672E-24	9.066E-23	3.570E-22	7.880E-21	2.705E-20	2.251E-19	3.116E-19
Th-230	U-238	6.383E-15	0.000E+00	5.286E-26	1.305E-24	5.139E-24	1.134E-22	3.894E-22	3.240E-21	4.485E-21
Th-230	U-238	3.196E-07	0.000E+00	2.647E-18	6.535E-17	2.573E-16	5.679E-15	1.950E-14	1.622E-13	2.246E-13
Th-230	U-238	4.219E-13	0.000E+00	3.494E-24	8.626E-23	3.396E-22	7.497E-21	2.574E-20	2.142E-19	2.964E-19
Th-230	U-238	6.073E-15	0.000E+00	5.029E-26	1.242E-24	4.889E-24	1.079E-22	3.705E-22	3.083E-21	4.267E-21
Th-230	U-238	6.713E-11	0.000E+00	5.560E-22	1.373E-20	5.405E-20	1.193E-18	4.095E-18	3.408E-17	4.717E-17
Th-230	U-238	8.862E-17	0.000E+00	7.339E-28	1.812E-26	7.134E-26	1.575E-24	5.406E-24	4.499E-23	6.226E-23
Th-230	U-238	1.276E-18	0.000E+00	1.056E-29	2.608E-28	1.027E-27	2.267E-26	7.781E-26	6.475E-25	8.962E-25
Th-230	U-238	3.200E-10	0.000E+00	2.650E-21	6.543E-20	2.576E-19	5.686E-18	1.952E-17	1.624E-16	2.248E-16

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	0.000E+00	3.498E-27	8.636E-26	3.401E-25	7.506E-24	2.577E-23	2.144E-22	2.968E-22
Th-230	U-238	6.080E-18	0.000E+00	5.035E-29	1.243E-27	4.895E-27	1.080E-25	3.709E-25	3.086E-24	4.272E-24
Th-230	U-238	9.980E-01	0.000E+00	8.265E-12	2.040E-10	8.034E-10	1.773E-08	6.088E-08	5.066E-07	7.012E-07
Th-230	U-238	1.317E-06	0.000E+00	1.091E-17	2.693E-16	1.061E-15	2.341E-14	8.036E-14	6.687E-13	9.256E-13
Th-230	U-238	1.896E-08	0.000E+00	1.570E-19	3.877E-18	1.527E-17	3.369E-16	1.157E-15	9.626E-15	1.332E-14
Th-230	U-238	2.096E-04	0.000E+00	1.736E-15	4.286E-14	1.688E-13	3.725E-12	1.279E-11	1.064E-10	1.473E-10
Th-230	U-238	2.767E-10	0.000E+00	2.292E-21	5.657E-20	2.228E-19	4.917E-18	1.688E-17	1.405E-16	1.944E-16
Th-230	U-238	3.983E-12	0.000E+00	3.298E-23	8.143E-22	3.206E-21	7.077E-20	2.430E-19	2.022E-18	2.798E-18
Th-230	U-238	1.994E-04	0.000E+00	1.652E-15	4.078E-14	1.606E-13	3.544E-12	1.217E-11	1.012E-10	1.401E-10
Th-230	U-238	2.633E-10	0.000E+00	2.180E-21	5.382E-20	2.119E-19	4.678E-18	1.606E-17	1.336E-16	1.850E-16
Th-230	U-238	3.789E-12	0.000E+00	3.138E-23	7.747E-22	3.051E-21	6.733E-20	2.312E-19	1.924E-18	2.662E-18
Th-230	U-238	4.189E-08	0.000E+00	3.469E-19	8.565E-18	3.372E-17	7.444E-16	2.555E-15	2.127E-14	2.943E-14
Th-230	U-238	5.530E-14	0.000E+00	4.579E-25	1.131E-23	4.452E-23	9.826E-22	3.373E-21	2.807E-20	3.885E-20
Th-230	U-238	7.959E-16	0.000E+00	6.592E-27	1.627E-25	6.408E-25	1.414E-23	4.855E-23	4.040E-22	5.592E-22
Th-230	U-238	1.997E-07	0.000E+00	1.654E-18	4.083E-17	1.608E-16	3.548E-15	1.218E-14	1.014E-13	1.403E-13
Th-230	U-238	2.636E-13	0.000E+00	2.183E-24	5.389E-23	2.122E-22	4.684E-21	1.608E-20	1.338E-19	1.852E-19
Th-230	U-238	3.794E-15	0.000E+00	3.142E-26	7.757E-25	3.054E-24	6.742E-23	2.314E-22	1.926E-21	2.666E-21
Th-230	∑S(j):		0.000E+00	8.282E-12	2.045E-10	8.051E-10	1.777E-08	6.100E-08	5.076E-07	7.026E-07
U-238	U-238	2.111E-09	1.351E-09	1.345E-09	1.320E-09	1.289E-09	1.067E-09	8.427E-10	1.275E-10	1.204E-11
U-238	U-238	3.039E-11	1.945E-11	1.936E-11	1.899E-11	1.855E-11	1.536E-11	1.213E-11	1.836E-12	1.733E-13
U-238	∑S(j):		1.371E-09	1.364E-09	1.339E-09	1.307E-09	1.082E-09	8.548E-10	1.294E-10	1.221E-11
U-234	U-238	2.111E-09	0.000E+00	3.797E-15	1.863E-14	3.639E-14	1.506E-13	2.379E-13	1.799E-13	3.394E-14
Th-230	U-238	2.111E-09	0.000E+00	1.748E-20	4.316E-19	1.700E-18	3.751E-17	1.288E-16	1.072E-15	1.483E-15
U-238	U-238	3.359E-07	2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
U-238	U-238	4.434E-13	2.838E-13	2.825E-13	2.772E-13	2.707E-13	2.241E-13	1.770E-13	2.679E-14	2.528E-15
U-238	∑S(j):		2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
Ra-226	U-238	3.359E-07	0.000E+00	4.020E-22	4.975E-20	3.930E-19	4.449E-17	3.150E-16	1.620E-14	5.206E-14
Ra-226	U-238	4.434E-13	0.000E+00	5.307E-28	6.567E-26	5.188E-25	5.872E-23	4.158E-22	2.138E-20	6.871E-20
Ra-226	U-238	6.383E-15	0.000E+00	7.638E-30	9.452E-28	7.468E-27	8.452E-25	5.986E-24	3.077E-22	9.891E-22
Ra-226	U-238	2.096E-04	0.000E+00	2.509E-19	3.104E-17	2.453E-16	2.776E-14	1.966E-13	1.011E-11	3.248E-11
Ra-226	U-238	2.767E-10	0.000E+00	3.311E-25	4.098E-23	3.237E-22	3.664E-20	2.595E-19	1.334E-17	4.288E-17
Ra-226	U-238	3.983E-12	0.000E+00	4.766E-27	5.898E-25	4.660E-24	5.274E-22	3.735E-21	1.920E-19	6.172E-19
Ra-226	∑S(j):		0.000E+00	2.513E-19	3.109E-17	2.457E-16	2.780E-14	1.969E-13	1.012E-11	3.253E-11
U-238	U-238	6.383E-15	4.085E-15	4.066E-15	3.990E-15	3.897E-15	3.226E-15	2.548E-15	3.856E-16	3.639E-17
U-238	U-238	3.196E-07	2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	∑S(j):		2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	U-238	4.219E-13	2.700E-13	2.687E-13	2.637E-13	2.576E-13	2.132E-13	1.684E-13	2.548E-14	2.405E-15
U-238	U-238	6.073E-15	3.886E-15	3.868E-15	3.796E-15	3.707E-15	3.069E-15	2.424E-15	3.668E-16	3.462E-17
U-238	∑S(j):		2.739E-13	2.726E-13	2.675E-13	2.613E-13	2.163E-13	1.708E-13	2.585E-14	2.440E-15
U-238	U-238	6.713E-11	4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13
U-238	U-238	8.862E-17	5.671E-17	5.645E-17	5.539E-17	5.410E-17	4.479E-17	3.537E-17	5.353E-18	5.052E-19
U-238	∑S(j):		4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13

Summary : Perim Soil Add.3-Resident-Bkdg subtract

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Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
		t=	0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	0.000E+00	8.034E-26	9.942E-24	7.855E-23	8.890E-21	6.296E-20	3.237E-18	1.040E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.060E-31	1.312E-29	1.037E-28	1.173E-26	8.310E-26	4.272E-24	1.373E-23
Ra-226	U-238	1.276E-18	0.000E+00	1.526E-33	1.889E-31	1.492E-30	1.689E-28	1.196E-27	6.150E-26	1.977E-25
Ra-226	U-238	4.189E-08	0.000E+00	5.013E-23	6.204E-21	4.901E-20	5.547E-18	3.928E-17	2.020E-15	6.491E-15
Ra-226	U-238	5.530E-14	0.000E+00	6.617E-29	8.189E-27	6.470E-26	7.322E-24	5.186E-23	2.666E-21	8.569E-21
Ra-226	U-238	7.959E-16	0.000E+00	9.525E-31	1.179E-28	9.312E-28	1.054E-25	7.464E-25	3.837E-23	1.233E-22
Ra-226	∑S(j):		0.000E+00	5.021E-23	6.214E-21	4.909E-20	5.556E-18	3.935E-17	2.023E-15	6.502E-15
U-238	U-238	1.276E-18	8.163E-19	8.125E-19	7.973E-19	7.787E-19	6.447E-19	5.092E-19	7.705E-20	7.272E-21
U-238	U-238	3.200E-10	2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	∑S(j):		2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	U-238	4.224E-16	2.703E-16	2.691E-16	2.640E-16	2.579E-16	2.135E-16	1.686E-16	2.552E-17	2.408E-18
U-238	U-238	6.080E-18	3.891E-18	3.873E-18	3.800E-18	3.712E-18	3.073E-18	2.427E-18	3.673E-19	3.467E-20
U-238	∑S(j):		2.742E-16	2.729E-16	2.678E-16	2.616E-16	2.166E-16	1.710E-16	2.588E-17	2.443E-18
U-238	U-238	9.980E-01	6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.317E-06	8.431E-07	8.391E-07	8.234E-07	8.042E-07	6.658E-07	5.258E-07	7.958E-08	7.511E-09
U-238	∑S(j):		6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.896E-08	1.214E-08	1.208E-08	1.185E-08	1.158E-08	9.584E-09	7.569E-09	1.145E-09	1.081E-10
U-238	U-238	2.096E-04	1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	∑S(j):		1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	U-238	2.767E-10	1.771E-10	1.763E-10	1.730E-10	1.689E-10	1.399E-10	1.105E-10	1.671E-11	1.578E-12
U-238	U-238	3.983E-12	2.549E-12	2.537E-12	2.490E-12	2.431E-12	2.013E-12	1.590E-12	2.406E-13	2.271E-14
U-238	∑S(j):		1.796E-10	1.788E-10	1.754E-10	1.714E-10	1.419E-10	1.120E-10	1.696E-11	1.600E-12
U-238	U-238	1.994E-04	1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	2.633E-10	1.685E-10	1.677E-10	1.646E-10	1.607E-10	1.331E-10	1.051E-10	1.590E-11	1.501E-12
U-238	∑S(j):		1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	3.789E-12	2.425E-12	2.414E-12	2.369E-12	2.313E-12	1.915E-12	1.513E-12	2.289E-13	2.161E-14
U-238	U-238	4.189E-08	2.681E-08	2.668E-08	2.618E-08	2.557E-08	2.117E-08	1.672E-08	2.530E-09	2.388E-10
U-238	∑S(j):		2.681E-08	2.669E-08	2.619E-08	2.558E-08	2.118E-08	1.672E-08	2.531E-09	2.389E-10
U-238	U-238	5.530E-14	3.539E-14	3.522E-14	3.456E-14	3.376E-14	2.795E-14	2.207E-14	3.340E-15	3.153E-16
U-238	U-238	7.959E-16	5.094E-16	5.070E-16	4.975E-16	4.859E-16	4.023E-16	3.177E-16	4.808E-17	4.538E-18
U-238	∑S(j):		3.590E-14	3.573E-14	3.506E-14	3.424E-14	2.835E-14	2.239E-14	3.388E-15	3.198E-16
U-238	U-238	1.997E-07	1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	2.636E-13	1.687E-13	1.679E-13	1.648E-13	1.609E-13	1.332E-13	1.052E-13	1.592E-14	1.503E-15
U-238	∑S(j):		1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	3.794E-15	2.428E-15	2.417E-15	2.371E-15	2.316E-15	1.918E-15	1.514E-15	2.292E-16	2.163E-17

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

RESCALC.EXE execution time = 371.55 seconds

Total water/soil iteration failures = 5.200E+01.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1(1)
A-1	Ba-137m (Source: DCFPAK3.02)	3.381E+00	3.381E+00	DCF1(2)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1(3)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1(4)
A-1	Cs-137 (Source: DCFPAK3.02)	8.686E-04	8.687E-04	DCF1(5)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1(6)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1(7)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1(8)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1(9)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1(10)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1(11)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1(12)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1(13)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1(14)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1(15)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1(16)
A-1	Sr-90 (Source: DCFPAK3.02)	6.463E-04	6.464E-04	DCF1(17)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1(18)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1(19)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1(20)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1(21)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1(22)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1(23)
A-1	Y-90 (Source: DCFPAK3.02)	4.016E-02	4.017E-02	DCF1(24)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Cs-137+D	1.460E-04	1.457E-04	DCF2(1)
B-1	Pb-210+D	3.709E-02	2.077E-02	DCF2(2)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2(3)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2(4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2(5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2(8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2(11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2(14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2(17)
B-1	Sr-90+D	5.845E-04	5.786E-04	DCF2(20)
B-1	Th-230	3.760E-01	3.759E-01	DCF2(21)
B-1	U-234	3.480E-02	3.479E-02	DCF2(36)
B-1	U-238	2.970E-02	2.973E-02	DCF2(51)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2(52)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2(67)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Cs-137+D	5.030E-05	5.032E-05	DCF3(1)
D-1	Pb-210+D	7.065E-03	2.575E-03	DCF3(2)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3(3)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3(4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3(8)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3(11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3(14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3(17)
D-1	Sr-90+D	1.119E-04	1.021E-04	DCF3(20)
D-1	Th-230	7.920E-04	7.918E-04	DCF3(21)
D-1	U-234	1.830E-04	1.831E-04	DCF3(36)
D-1	U-238	1.650E-04	1.650E-04	DCF3(51)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(52)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(67)
D-34	Food transfer factors:			
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(1,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(1,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , 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(20,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(20,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(20,3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(21,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(21,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(36,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(36,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(36,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(52,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(52,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(52,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(67,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(67,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(67,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(1,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(20,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(20,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(21,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(21,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(36,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(36,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(52,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(52,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(67,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(67,2)
D-5				

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

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.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)	1.400E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	5.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	2.500E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	5.000E+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): Cs-137	1.330E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Ra-226	9.000E-02	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Sr-90	3.300E-01	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-238	6.400E-01	0.000E+00	---	S1(51)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(51)
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)	1.660E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.300E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.400E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	6.230E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.600E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.230E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.600E-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	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.660E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.000E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.800E-03	2.000E-02	---	HGWT

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.900E+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)	1.800E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	0.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.660E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.300E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.400E-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	4.900E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.889E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.618E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.574E-02	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(51)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(51,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(51)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(51)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(51)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.082E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.349E-06	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(36)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(36,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(36)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(36)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(36)
R017	Inhalation rate (m**3/yr)	7.300E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	1.700E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	6.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
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)	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)	3.500E+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	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	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	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

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	257	---	---	KYMAX

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Summary of Pathway Selections

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

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	14000.00 square meters	Cs-137	1.330E+00
Thickness:	5.00 meters	Ra-226	9.000E-02
Cover Depth:	0.00 meters	Sr-90	3.300E-01
		U-238	6.400E-01

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 1.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	9.925E-01	1.015E+00	1.085E+00	1.122E+00	6.585E-01	4.357E-01	1.788E-01	1.216E-01
M(t):	6.617E-02	6.768E-02	7.233E-02	7.477E-02	4.390E-02	2.905E-02	1.192E-02	8.106E-03

Maximum TDOSE(t): 1.128E+00 mrem/yr at t = 9.36 ± 0.02 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 = 9.363E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.217E-01	0.5510	9.620E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.465E-04	0.0004
Ra-226	1.729E-01	0.1533	2.516E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.187E-03	0.0019
Sr-90	1.522E-03	0.0013	7.355E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.897E-04	0.0002
U-238	1.838E-02	0.0163	1.132E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.103E-04	0.0008
Total	8.145E-01	0.7219	1.400E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.733E-03	0.0033

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.363E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.593E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.222E-01	0.5514
Ra-226	7.169E-04	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.759E-01	0.1559
Sr-90	2.702E-01	0.2395	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.719E-01	0.2410
U-238	3.891E-02	0.0345	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-02	0.0517
Total	3.099E-01	0.2747	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.128E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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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.
Cs-137	7.730E-01	0.7788	1.196E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.551E-04	0.0006
Ra-226	1.739E-01	0.1752	2.012E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.687E-04	0.0009
Sr-90	2.427E-03	0.0024	1.173E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.025E-04	0.0003
U-238	1.921E-02	0.0194	1.183E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.514E-04	0.0010
Total	9.685E-01	0.9758	1.408E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.678E-03	0.0027

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.
Cs-137	2.233E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.735E-01	0.7794
Ra-226	3.119E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.748E-01	0.1761
Sr-90	1.918E-02	0.0193	0.000E+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-02	0.0221
U-238	2.007E-03	0.0020	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.229E-02	0.0225
Total	2.119E-02	0.0214	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.925E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Total Dose 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.
Cs-137	7.552E-01	0.7439	1.169E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.424E-04	0.0005
Ra-226	1.738E-01	0.1712	2.074E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.030E-03	0.0010
Sr-90	2.309E-03	0.0023	1.116E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.878E-04	0.0003
U-238	1.912E-02	0.0188	1.177E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.470E-04	0.0009
Total	9.504E-01	0.9361	1.408E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.807E-03	0.0028

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

Water Dependent Pathways

Radio-	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.
Cs-137	6.602E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.558E-01	0.7444
Ra-226	2.081E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.748E-01	0.1722
Sr-90	5.585E-02	0.0550	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.845E-02	0.0576
U-238	6.026E-03	0.0059	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.621E-02	0.0258
Total	6.190E-02	0.0610	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.015E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+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.
Cs-137	6.881E-01	0.6342	1.065E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.942E-04	0.0005
Ra-226	1.734E-01	0.1598	2.301E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.623E-03	0.0015
Sr-90	1.892E-03	0.0017	9.141E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.358E-04	0.0002
U-238	1.877E-02	0.0173	1.155E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.293E-04	0.0009
Total	8.821E-01	0.8130	1.405E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.282E-03	0.0030

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+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.
Cs-137	2.215E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.886E-01	0.6347
Ra-226	2.450E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.753E-01	0.1615
Sr-90	1.773E-01	0.1634	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-01	0.1653
U-238	2.192E-02	0.0202	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.173E-02	0.0385
Total	1.995E-01	0.1838	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.085E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Total Dose 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.
Cs-137	6.125E-01	0.5461	9.478E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.399E-04	0.0004
Ra-226	1.729E-01	0.1541	2.545E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.263E-03	0.0020
Sr-90	1.475E-03	0.0013	7.126E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.838E-04	0.0002
U-238	1.833E-02	0.0163	1.128E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.076E-04	0.0008
Total	8.052E-01	0.7179	1.399E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.794E-03	0.0034

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+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.
Cs-137	3.770E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.130E-01	0.5466
Ra-226	8.017E-04	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.760E-01	0.1569
Sr-90	2.702E-01	0.2409	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.719E-01	0.2424
U-238	4.137E-02	0.0369	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.071E-02	0.0541
Total	3.124E-01	0.2786	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.122E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	2.415E-01	0.3668	3.737E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E-04	0.0003
Ra-226	1.689E-01	0.2565	3.517E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.856E-03	0.0074
Sr-90	2.011E-04	0.0003	9.715E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.506E-05	0.0000
U-238	1.517E-02	0.0230	9.343E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.515E-04	0.0011
Total	4.258E-01	0.6466	1.291E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.806E-03	0.0088

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

Water Dependent Pathways

Radio-	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.
Cs-137	7.201E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.418E-01	0.3672
Ra-226	8.577E-03	0.0130	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.823E-01	0.2769
Sr-90	3.679E-02	0.0559	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.702E-02	0.0562
U-238	1.813E-01	0.2754	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.973E-01	0.2997
Total	2.268E-01	0.3444	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.585E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Total Dose 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.
Cs-137	7.547E-02	0.1732	1.168E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.420E-05	0.0001
Ra-226	1.639E-01	0.3762	3.729E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.523E-03	0.0127
Sr-90	1.666E-05	0.0000	8.050E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.076E-06	0.0000
U-238	1.198E-02	0.0275	7.380E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.936E-04	0.0014
Total	2.514E-01	0.5770	1.112E-04	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.173E-03	0.0142

Total Dose 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.
Cs-137	4.516E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.557E-02	0.1734
Ra-226	1.503E-02	0.0345	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.845E-01	0.4235
Sr-90	3.040E-03	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.058E-03	0.0070
U-238	1.599E-01	0.3670	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.726E-01	0.3961
Total	1.780E-01	0.4086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.357E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	6.856E-06	0.0000	1.061E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.924E-09	0.0000
Ra-226	1.292E-01	0.7228	3.004E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.520E-03	0.0253
Sr-90	3.699E-14	0.0000	1.787E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.610E-15	0.0000
U-238	1.814E-03	0.0101	1.118E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.994E-05	0.0005
Total	1.310E-01	0.7330	4.123E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.610E-03	0.0258

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

Water Dependent Pathways

Radio-	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.
Cs-137	2.185E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.883E-06	0.0000
Ra-226	1.942E-02	0.1086	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.532E-01	0.8569
Sr-90	6.571E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.612E-12	0.0000
U-238	2.366E-02	0.1323	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.557E-02	0.1431
Total	4.308E-02	0.2410	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.788E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Total Dose 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.
Cs-137	6.081E-11	0.0000	9.409E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.367E-14	0.0000
Ra-226	9.597E-02	0.7893	2.231E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.357E-03	0.0276
Sr-90	5.639E-25	0.0000	2.724E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.027E-26	0.0000
U-238	1.715E-04	0.0014	1.059E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.515E-06	0.0001
Total	9.614E-02	0.7907	2.337E-05	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.365E-03	0.0277

Total Dose 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.
Cs-137	4.216E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-11	0.0000
Ra-226	1.991E-02	0.1638	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.193E-01	0.9808
Sr-90	9.577E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.641E-23	0.0000
U-238	2.149E-03	0.0177	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.330E-03	0.0192
Total	2.206E-02	0.1815	0.000E+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	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	5.816E-01	5.682E-01	5.178E-01	4.609E-01	1.818E-01	5.682E-02	5.175E-06	4.607E-11
Ra-226+D	Ra-226+D	9.996E-01	1.939E+00	1.938E+00	1.934E+00	1.928E+00	1.883E+00	1.828E+00	1.442E+00	1.073E+00
Ra-226+D	Pb-210+D	9.996E-01	9.738E-04	3.008E-03	1.228E-02	2.577E-02	1.418E-01	2.211E-01	2.588E-01	2.517E-01
Ra-226+D	∑DSR(j)		1.940E+00	1.941E+00	1.946E+00	1.954E+00	2.025E+00	2.049E+00	1.701E+00	1.324E+00
Ra-226+D	Ra-226+D	1.319E-06	2.560E-06	2.559E-06	2.553E-06	2.545E-06	2.485E-06	2.413E-06	1.904E-06	1.416E-06
Ra-226+D	Pb-210+D1	1.319E-06	5.377E-10	1.652E-09	6.614E-09	1.366E-08	7.182E-08	1.107E-07	1.282E-07	1.239E-07
Ra-226+D	∑DSR(j)		2.561E-06	2.560E-06	2.559E-06	2.559E-06	2.557E-06	2.524E-06	2.032E-06	1.540E-06
Ra-226+D	Ra-226+D	1.899E-08	3.685E-08	3.683E-08	3.674E-08	3.663E-08	3.577E-08	3.473E-08	2.740E-08	2.038E-08
Ra-226+D	Pb-210+D2	1.899E-08	4.100E-11	1.221E-10	4.337E-10	7.941E-10	2.684E-09	3.521E-09	3.431E-09	2.961E-09
Ra-226+D	∑DSR(j)		3.689E-08	3.695E-08	3.717E-08	3.743E-08	3.846E-08	3.825E-08	3.083E-08	2.334E-08
Ra-226+D1	Ra-226+D1	2.100E-04	1.058E-03	1.057E-03	1.054E-03	1.051E-03	1.027E-03	9.966E-04	7.858E-04	5.839E-04
Ra-226+D1	Pb-210+D	2.100E-04	2.045E-07	6.318E-07	2.578E-06	5.413E-06	2.978E-05	4.645E-05	5.436E-05	5.286E-05
Ra-226+D1	∑DSR(j)		1.058E-03	1.058E-03	1.057E-03	1.057E-03	1.056E-03	1.043E-03	8.402E-04	6.368E-04
Ra-226+D1	Ra-226+D1	2.771E-10	1.396E-09	1.395E-09	1.392E-09	1.388E-09	1.355E-09	1.315E-09	1.037E-09	7.708E-10
Ra-226+D1	Pb-210+D1	2.771E-10	1.129E-13	3.470E-13	1.389E-12	2.868E-12	1.508E-11	2.325E-11	2.693E-11	2.603E-11
Ra-226+D1	∑DSR(j)		1.396E-09	1.396E-09	1.393E-09	1.391E-09	1.370E-09	1.339E-09	1.064E-09	7.968E-10
Ra-226+D1	Ra-226+D1	3.989E-12	2.009E-11	2.008E-11	2.003E-11	1.998E-11	1.951E-11	1.893E-11	1.493E-11	1.109E-11
Ra-226+D1	Pb-210+D2	3.989E-12	8.613E-15	2.566E-14	9.109E-14	1.668E-13	5.638E-13	7.396E-13	7.206E-13	6.219E-13
Ra-226+D1	∑DSR(j)		2.010E-11	2.011E-11	2.013E-11	2.014E-11	2.007E-11	1.967E-11	1.565E-11	1.172E-11
Ra-226+D2	Ra-226+D2	1.998E-04	3.407E-04	3.405E-04	3.397E-04	3.387E-04	3.307E-04	3.211E-04	2.534E-04	1.885E-04
Ra-226+D2	Pb-210+D	1.998E-04	1.946E-07	6.011E-07	2.453E-06	5.150E-06	2.833E-05	4.419E-05	5.172E-05	5.029E-05
Ra-226+D2	∑DSR(j)		3.409E-04	3.411E-04	3.421E-04	3.438E-04	3.591E-04	3.653E-04	3.051E-04	2.388E-04
Ra-226+D2	Ra-226+D2	2.637E-10	4.497E-10	4.494E-10	4.484E-10	4.470E-10	4.366E-10	4.238E-10	3.345E-10	2.488E-10
Ra-226+D2	Pb-210+D1	2.637E-10	1.074E-13	3.301E-13	1.322E-12	2.729E-12	1.435E-11	2.212E-11	2.562E-11	2.477E-11
Ra-226+D2	∑DSR(j)		4.498E-10	4.498E-10	4.497E-10	4.498E-10	4.509E-10	4.460E-10	3.601E-10	2.736E-10
Ra-226+D2	Ra-226+D2	3.795E-12	6.473E-12	6.469E-12	6.454E-12	6.435E-12	6.284E-12	6.101E-12	4.814E-12	3.581E-12
Ra-226+D2	Pb-210+D2	3.795E-12	8.194E-15	2.441E-14	8.667E-14	1.587E-13	5.364E-13	7.036E-13	6.856E-13	5.917E-13
Ra-226+D2	∑DSR(j)		6.481E-12	6.494E-12	6.541E-12	6.593E-12	6.821E-12	6.804E-12	5.500E-12	4.173E-12
Ra-226+D3	Ra-226+D3	4.196E-08	2.015E-07	2.014E-07	2.009E-07	2.003E-07	1.956E-07	1.899E-07	1.497E-07	1.113E-07
Ra-226+D3	Pb-210+D	4.196E-08	4.087E-11	1.263E-10	5.153E-10	1.082E-09	5.951E-09	9.282E-09	1.086E-08	1.056E-08
Ra-226+D3	∑DSR(j)		2.015E-07	2.015E-07	2.014E-07	2.014E-07	2.015E-07	1.992E-07	1.606E-07	1.218E-07
Ra-226+D3	Ra-226+D3	5.538E-14	2.660E-13	2.658E-13	2.652E-13	2.644E-13	2.582E-13	2.506E-13	1.976E-13	1.469E-13
Ra-226+D3	Pb-210+D1	5.538E-14	2.257E-17	6.934E-17	2.776E-16	5.732E-16	3.015E-15	4.647E-15	5.381E-15	5.202E-15
Ra-226+D3	∑DSR(j)		2.660E-13	2.659E-13	2.655E-13	2.650E-13	2.612E-13	2.553E-13	2.030E-13	1.521E-13

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226+D3	Ra-226+D3	7.972E-16	3.828E-15	3.826E-15	3.817E-15	3.806E-15	3.716E-15	3.608E-15	2.845E-15	2.114E-15
Ra-226+D3	Pb-210+D2	7.972E-16	1.721E-18	5.127E-18	1.820E-17	3.333E-17	1.127E-16	1.478E-16	1.440E-16	1.243E-16
Ra-226+D3	∑DSR(j)		3.830E-15	3.831E-15	3.835E-15	3.839E-15	3.829E-15	3.755E-15	2.989E-15	2.238E-15
Ra-226+D4	Ra-226+D4	2.000E-07	3.234E-09	3.233E-09	3.229E-09	3.224E-09	3.184E-09	3.134E-09	2.765E-09	2.363E-09
Ra-226+D4	Pb-210+D	2.000E-07	1.948E-10	6.018E-10	2.456E-09	5.156E-09	2.837E-08	4.424E-08	5.178E-08	5.035E-08
Ra-226+D4	∑DSR(j)		3.429E-09	3.835E-09	5.685E-09	8.380E-09	3.155E-08	4.738E-08	5.454E-08	5.272E-08
Ra-226+D4	Ra-226+D4	2.640E-13	4.269E-15	4.267E-15	4.262E-15	4.255E-15	4.202E-15	4.137E-15	3.650E-15	3.119E-15
Ra-226+D4	Pb-210+D1	2.640E-13	1.076E-16	3.305E-16	1.323E-15	2.732E-15	1.437E-14	2.215E-14	2.565E-14	2.480E-14
Ra-226+D4	∑DSR(j)		4.376E-15	4.598E-15	5.585E-15	6.988E-15	1.857E-14	2.629E-14	2.930E-14	2.792E-14
Ra-226+D4	Ra-226+D4	3.800E-15	6.144E-17	6.143E-17	6.135E-17	6.125E-17	6.049E-17	5.955E-17	5.253E-17	4.490E-17
Ra-226+D4	Pb-210+D2	3.800E-15	8.204E-18	2.444E-17	8.677E-17	1.589E-16	5.371E-16	7.045E-16	6.865E-16	5.924E-16
Ra-226+D4	∑DSR(j)		6.965E-17	8.586E-17	1.481E-16	2.201E-16	5.975E-16	7.640E-16	7.390E-16	6.373E-16
Sr-90+D	Sr-90+D	1.000E+00	6.640E-02	1.771E-01	5.436E-01	8.239E-01	1.122E-01	9.268E-03	2.004E-11	2.921E-22
U-238	U-238	5.450E-07	2.460E-09	5.638E-09	1.820E-08	3.357E-08	1.442E-07	1.271E-07	1.878E-08	1.703E-09
U-238+D	U-238+D	1.599E-03	2.487E-03	2.485E-03	2.479E-03	2.471E-03	2.417E-03	1.951E-03	2.938E-04	2.751E-05
U-238+D	U-234	1.599E-03	1.385E-11	8.043E-11	9.233E-10	3.244E-09	6.693E-08	1.174E-07	8.634E-08	1.564E-08
U-238+D	Th-230	1.599E-03	1.481E-16	7.027E-16	6.796E-15	2.259E-14	4.406E-13	1.505E-12	1.237E-11	1.713E-11
U-238+D	Ra-226+D	1.599E-03	1.346E-14	4.010E-14	1.605E-13	2.923E-13	1.800E-12	6.811E-12	2.492E-10	7.909E-10
U-238+D	Pb-210+D	1.599E-03	4.560E-13	1.358E-12	5.406E-12	9.681E-12	3.840E-11	7.209E-11	4.656E-10	1.267E-09
U-238+D	∑DSR(j)		2.487E-03	2.485E-03	2.479E-03	2.471E-03	2.417E-03	1.951E-03	2.939E-04	2.752E-05
U-238+D	U-238+D	2.111E-09	3.282E-09	3.280E-09	3.272E-09	3.262E-09	3.190E-09	2.575E-09	3.878E-10	3.631E-11
U-238+D	U-234	2.111E-09	1.828E-17	1.062E-16	1.219E-15	4.282E-15	8.835E-14	1.549E-13	1.140E-13	2.065E-14
U-238+D	Th-230	2.111E-09	1.955E-22	9.275E-22	8.970E-21	2.982E-20	5.815E-19	1.986E-18	1.633E-17	2.261E-17
U-238+D	Ra-226+D	2.111E-09	1.776E-20	5.293E-20	2.118E-19	3.858E-19	2.376E-18	8.991E-18	3.289E-16	1.044E-15
U-238+D	Pb-210+D1	2.111E-09	2.202E-19	6.559E-19	2.611E-18	4.676E-18	1.855E-17	3.482E-17	2.253E-16	6.133E-16
U-238+D	∑DSR(j)		3.282E-09	3.280E-09	3.272E-09	3.262E-09	3.190E-09	2.575E-09	3.879E-10	3.633E-11
U-238+D	U-238+D	3.039E-11	4.724E-11	4.722E-11	4.710E-11	4.696E-11	4.592E-11	3.706E-11	5.582E-12	5.226E-13
U-238+D	U-234	3.039E-11	2.631E-19	1.528E-18	1.754E-17	6.163E-17	1.272E-15	2.230E-15	1.640E-15	2.972E-16
U-238+D	Th-230	3.039E-11	2.813E-24	1.335E-23	1.291E-22	4.293E-22	8.371E-21	2.859E-20	2.350E-19	3.255E-19
U-238+D	Ra-226+D	3.039E-11	2.557E-22	7.619E-22	3.049E-21	5.553E-21	3.420E-20	1.294E-19	4.734E-18	1.503E-17
U-238+D	Pb-210+D2	3.039E-11	3.164E-21	9.424E-21	3.751E-20	6.717E-20	2.667E-19	5.027E-19	3.461E-18	9.590E-18
U-238+D	∑DSR(j)		4.724E-11	4.722E-11	4.710E-11	4.696E-11	4.592E-11	3.707E-11	5.583E-12	5.230E-13
U-238+D	U-238+D	3.359E-07	5.223E-07	5.220E-07	5.207E-07	5.191E-07	5.076E-07	4.097E-07	6.171E-08	5.778E-09
U-238+D	U-234	3.359E-07	2.909E-15	1.689E-14	1.939E-13	6.813E-13	1.406E-11	2.466E-11	1.814E-11	3.285E-12
U-238+D	Th-230	3.359E-07	3.110E-20	1.476E-19	1.427E-18	4.745E-18	9.254E-17	3.161E-16	2.598E-15	3.599E-15
U-238+D	Ra-226+D1	3.359E-07	2.827E-18	8.430E-18	3.403E-17	6.360E-17	5.997E-16	2.977E-15	1.309E-13	4.183E-13
U-238+D	Pb-210+D	3.359E-07	9.579E-17	2.853E-16	1.136E-15	2.034E-15	8.067E-15	1.514E-14	9.779E-14	2.660E-13
U-238+D	∑DSR(j)		5.223E-07	5.220E-07	5.207E-07	5.191E-07	5.076E-07	4.098E-07	6.172E-08	5.782E-09

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	4.434E-13	6.894E-13	6.890E-13	6.873E-13	6.852E-13	6.701E-13	5.409E-13	8.145E-14	7.626E-15
U-238+D	U-234	4.434E-13	3.839E-21	2.230E-20	2.560E-19	8.993E-19	1.856E-17	3.255E-17	2.394E-17	4.337E-18
U-238+D	Th-230	4.434E-13	4.105E-26	1.948E-25	1.884E-24	6.264E-24	1.221E-22	4.172E-22	3.429E-21	4.750E-21
U-238+D	Ra-226+D1	4.434E-13	3.732E-24	1.113E-23	4.492E-23	8.395E-23	7.916E-22	3.929E-21	1.728E-19	5.521E-19
U-238+D	Pb-210+D1	4.434E-13	4.626E-23	1.378E-22	5.484E-22	9.821E-22	3.896E-21	7.314E-21	4.732E-20	1.288E-19
U-238+D	∑DSR(j)		6.894E-13	6.890E-13	6.873E-13	6.852E-13	6.701E-13	5.409E-13	8.148E-14	7.631E-15
U-238+D	U-238+D	6.383E-15	9.924E-15	9.917E-15	9.893E-15	9.863E-15	9.645E-15	7.785E-15	1.172E-15	1.098E-16
U-238+D	U-234	6.383E-15	5.526E-23	3.210E-22	3.685E-21	1.294E-20	2.671E-19	4.685E-19	3.446E-19	6.242E-20
U-238+D	Th-230	6.383E-15	5.909E-28	2.804E-27	2.712E-26	9.016E-26	1.758E-24	6.005E-24	4.936E-23	6.837E-23
U-238+D	Ra-226+D1	6.383E-15	5.371E-26	1.602E-25	6.466E-25	1.208E-24	1.139E-23	5.656E-23	2.487E-21	7.947E-21
U-238+D	Pb-210+D2	6.383E-15	6.646E-25	1.980E-24	7.879E-24	1.411E-23	5.601E-23	1.056E-22	7.269E-22	2.014E-21
U-238+D	∑DSR(j)		9.924E-15	9.917E-15	9.893E-15	9.863E-15	9.645E-15	7.786E-15	1.173E-15	1.098E-16
U-238+D	U-238+D	3.196E-07	4.969E-07	4.966E-07	4.954E-07	4.939E-07	4.830E-07	3.898E-07	5.871E-08	5.497E-09
U-238+D	U-234	3.196E-07	2.767E-15	1.607E-14	1.845E-13	6.482E-13	1.337E-11	2.346E-11	1.725E-11	3.126E-12
U-238+D	Th-230	3.196E-07	2.959E-20	1.404E-19	1.358E-18	4.515E-18	8.804E-17	3.007E-16	2.472E-15	3.424E-15
U-238+D	Ra-226+D2	3.196E-07	2.688E-18	8.009E-18	3.203E-17	5.822E-17	3.437E-16	1.249E-15	4.413E-14	1.399E-13
U-238+D	Pb-210+D	3.196E-07	9.114E-17	2.715E-16	1.080E-15	1.935E-15	7.675E-15	1.441E-14	9.304E-14	2.531E-13
U-238+D	∑DSR(j)		4.969E-07	4.966E-07	4.954E-07	4.939E-07	4.830E-07	3.899E-07	5.873E-08	5.500E-09
U-238+D	U-238+D	4.219E-13	6.559E-13	6.555E-13	6.539E-13	6.519E-13	6.375E-13	5.146E-13	7.749E-14	7.256E-15
U-238+D	U-234	4.219E-13	3.653E-21	2.122E-20	2.436E-19	8.556E-19	1.765E-17	3.096E-17	2.278E-17	4.126E-18
U-238+D	Th-230	4.219E-13	3.906E-26	1.854E-25	1.793E-24	5.960E-24	1.162E-22	3.969E-22	3.263E-21	4.519E-21
U-238+D	Ra-226+D2	4.219E-13	3.548E-24	1.057E-23	4.228E-23	7.685E-23	4.536E-22	1.649E-21	5.825E-20	1.846E-19
U-238+D	Pb-210+D1	4.219E-13	4.401E-23	1.311E-22	5.217E-22	9.344E-22	3.706E-21	6.959E-21	4.502E-20	1.226E-19
U-238+D	∑DSR(j)		6.559E-13	6.555E-13	6.539E-13	6.519E-13	6.375E-13	5.146E-13	7.752E-14	7.260E-15
U-238+D	U-238+D	6.073E-15	9.441E-15	9.436E-15	9.412E-15	9.384E-15	9.176E-15	7.407E-15	1.115E-15	1.044E-16
U-238+D	U-234	6.073E-15	5.258E-23	3.054E-22	3.506E-21	1.232E-20	2.541E-19	4.457E-19	3.278E-19	5.939E-20
U-238+D	Th-230	6.073E-15	5.622E-28	2.668E-27	2.580E-26	8.578E-26	1.673E-24	5.713E-24	4.697E-23	6.505E-23
U-238+D	Ra-226+D2	6.073E-15	5.107E-26	1.522E-25	6.086E-25	1.106E-24	6.529E-24	2.374E-23	8.384E-22	2.657E-21
U-238+D	Pb-210+D2	6.073E-15	6.323E-25	1.883E-24	7.496E-24	1.342E-23	5.329E-23	1.005E-22	6.916E-22	1.916E-21
U-238+D	∑DSR(j)		9.441E-15	9.436E-15	9.412E-15	9.384E-15	9.177E-15	7.407E-15	1.116E-15	1.045E-16
U-238+D	U-238+D	6.713E-11	1.044E-10	1.043E-10	1.041E-10	1.037E-10	1.014E-10	8.188E-11	1.233E-11	1.155E-12
U-238+D	U-234	6.713E-11	5.812E-19	3.376E-18	3.876E-17	1.362E-16	2.809E-15	4.927E-15	3.624E-15	6.565E-16
U-238+D	Th-230	6.713E-11	6.215E-24	2.950E-23	2.853E-22	9.483E-22	1.849E-20	6.316E-20	5.192E-19	7.191E-19
U-238+D	Ra-226+D3	6.713E-11	5.646E-22	1.684E-21	6.793E-21	1.267E-20	1.165E-19	5.714E-19	2.497E-17	7.976E-17
U-238+D	Pb-210+D	6.713E-11	1.914E-20	5.701E-20	2.269E-19	4.064E-19	1.612E-18	3.026E-18	1.954E-17	5.316E-17
U-238+D	∑DSR(j)		1.044E-10	1.043E-10	1.041E-10	1.037E-10	1.014E-10	8.189E-11	1.233E-11	1.155E-12

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	8.862E-17	1.378E-16	1.377E-16	1.373E-16	1.369E-16	1.339E-16	1.081E-16	1.628E-17	1.524E-18
U-238+D	U-234	8.862E-17	7.672E-25	4.457E-24	5.116E-23	1.797E-22	3.708E-21	6.504E-21	4.784E-21	8.666E-22
U-238+D	Th-230	8.862E-17	8.204E-30	3.893E-29	3.765E-28	1.252E-27	2.441E-26	8.337E-26	6.853E-25	9.492E-25
U-238+D	Ra-226+D3	8.862E-17	7.453E-28	2.223E-27	8.966E-27	1.672E-26	1.537E-25	7.542E-25	3.296E-23	1.053E-22
U-238+D	Pb-210+D1	8.862E-17	9.243E-27	2.753E-26	1.096E-25	1.963E-25	7.785E-25	1.462E-24	9.457E-24	2.574E-23
U-238+D	∑DSR(j)		1.378E-16	1.377E-16	1.373E-16	1.369E-16	1.339E-16	1.081E-16	1.628E-17	1.525E-18
U-238+D	U-238+D	1.276E-18	1.983E-18	1.982E-18	1.977E-18	1.971E-18	1.927E-18	1.556E-18	2.343E-19	2.194E-20
U-238+D	U-234	1.276E-18	1.104E-26	6.415E-26	7.364E-25	2.587E-24	5.338E-23	9.362E-23	6.886E-23	1.247E-23
U-238+D	Th-230	1.276E-18	1.181E-31	5.604E-31	5.420E-30	1.802E-29	3.514E-28	1.200E-27	9.865E-27	1.366E-26
U-238+D	Ra-226+D3	1.276E-18	1.073E-29	3.199E-29	1.291E-28	2.407E-28	2.213E-27	1.086E-26	4.744E-25	1.515E-24
U-238+D	Pb-210+D2	1.276E-18	1.328E-28	3.956E-28	1.574E-27	2.820E-27	1.119E-26	2.110E-26	1.453E-25	4.025E-25
U-238+D	∑DSR(j)		1.983E-18	1.982E-18	1.977E-18	1.971E-18	1.928E-18	1.556E-18	2.344E-19	2.195E-20
U-238+D	U-238+D	3.200E-10	4.975E-10	4.972E-10	4.960E-10	4.945E-10	4.836E-10	3.903E-10	5.878E-11	5.504E-12
U-238+D	U-234	3.200E-10	2.771E-18	1.609E-17	1.847E-16	6.490E-16	1.339E-14	2.349E-14	1.728E-14	3.129E-15
U-238+D	Th-230	3.200E-10	2.963E-23	1.406E-22	1.360E-21	4.520E-21	8.815E-20	3.011E-19	2.475E-18	3.428E-18
U-238+D	Ra-226+D4	3.200E-10	2.690E-21	8.012E-21	3.189E-20	5.712E-20	2.288E-19	4.475E-19	3.363E-18	9.012E-18
U-238+D	Pb-210+D	3.200E-10	9.123E-20	2.718E-19	1.082E-18	1.937E-18	7.683E-18	1.442E-17	9.315E-17	2.534E-16
U-238+D	∑DSR(j)		4.975E-10	4.972E-10	4.960E-10	4.945E-10	4.836E-10	3.903E-10	5.880E-11	5.507E-12
U-238+D	U-238+D	4.224E-16	6.567E-16	6.563E-16	6.547E-16	6.527E-16	6.383E-16	5.152E-16	7.759E-17	7.265E-18
U-238+D	U-234	4.224E-16	3.657E-24	2.124E-23	2.438E-22	8.567E-22	1.768E-20	3.100E-20	2.280E-20	4.131E-21
U-238+D	Th-230	4.224E-16	3.911E-29	1.856E-28	1.795E-27	5.967E-27	1.164E-25	3.974E-25	3.267E-24	4.525E-24
U-238+D	Ra-226+D4	4.224E-16	3.550E-27	1.058E-26	4.210E-26	7.540E-26	3.021E-25	5.906E-25	4.440E-24	1.190E-23
U-238+D	Pb-210+D1	4.224E-16	4.406E-26	1.312E-25	5.224E-25	9.355E-25	3.711E-24	6.967E-24	4.508E-23	1.227E-22
U-238+D	∑DSR(j)		6.567E-16	6.563E-16	6.547E-16	6.527E-16	6.383E-16	5.152E-16	7.761E-17	7.269E-18
U-238+D	U-238+D	6.080E-18	9.453E-18	9.447E-18	9.424E-18	9.395E-18	9.188E-18	7.416E-18	1.117E-18	1.046E-19
U-238+D	U-234	6.080E-18	5.264E-26	3.058E-25	3.510E-24	1.233E-23	2.544E-22	4.462E-22	3.282E-22	5.946E-23
U-238+D	Th-230	6.080E-18	5.629E-31	2.671E-30	2.583E-29	8.589E-29	1.675E-27	5.720E-27	4.702E-26	6.513E-26
U-238+D	Ra-226+D4	6.080E-18	5.110E-29	1.522E-28	6.059E-28	1.085E-27	4.348E-27	8.502E-27	6.390E-26	1.712E-25
U-238+D	Pb-210+D2	6.080E-18	6.330E-28	1.886E-27	7.505E-27	1.344E-26	5.336E-26	1.006E-25	6.924E-25	1.919E-24
U-238+D	∑DSR(j)		9.453E-18	9.447E-18	9.424E-18	9.395E-18	9.188E-18	7.416E-18	1.117E-18	1.046E-19
U-238+D1	U-238+D1	9.980E-01	3.233E-02	3.846E-02	6.270E-02	9.235E-02	3.058E-01	2.675E-01	3.960E-02	3.600E-03
U-238+D1	U-234	9.980E-01	8.641E-09	5.019E-08	5.761E-07	2.024E-06	4.176E-05	7.325E-05	5.388E-05	9.760E-06
U-238+D1	Th-230	9.980E-01	9.240E-14	4.385E-13	4.241E-12	1.410E-11	2.749E-10	9.389E-10	7.718E-09	1.069E-08
U-238+D1	Ra-226+D	9.980E-01	8.397E-12	2.502E-11	1.001E-10	1.824E-10	1.123E-09	4.250E-09	1.555E-07	4.935E-07
U-238+D1	Pb-210+D	9.980E-01	2.845E-10	8.475E-10	3.373E-09	6.041E-09	2.396E-08	4.499E-08	2.905E-07	7.903E-07
U-238+D1	∑DSR(j)		3.233E-02	3.846E-02	6.270E-02	9.236E-02	3.058E-01	2.676E-01	3.965E-02	3.611E-03

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	1.317E-06	4.267E-08	5.076E-08	8.276E-08	1.219E-07	4.036E-07	3.531E-07	5.227E-08	4.753E-09
U-238+D1	U-234	1.317E-06	1.141E-14	6.625E-14	7.605E-13	2.672E-12	5.513E-11	9.669E-11	7.112E-11	1.288E-11
U-238+D1	Th-230	1.317E-06	1.220E-19	5.788E-19	5.598E-18	1.861E-17	3.629E-16	1.239E-15	1.019E-14	1.411E-14
U-238+D1	Ra-226+D	1.317E-06	1.108E-17	3.303E-17	1.322E-16	2.407E-16	1.483E-15	5.610E-15	2.052E-13	6.514E-13
U-238+D1	Pb-210+D1	1.317E-06	1.374E-16	4.093E-16	1.629E-15	2.918E-15	1.157E-14	2.173E-14	1.406E-13	3.827E-13
U-238+D1	∑DSR(j)		4.267E-08	5.076E-08	8.276E-08	1.219E-07	4.037E-07	3.532E-07	5.234E-08	4.766E-09
U-238+D1	U-238+D1	1.896E-08	6.142E-10	7.307E-10	1.191E-09	1.755E-09	5.810E-09	5.083E-09	7.523E-10	6.841E-11
U-238+D1	U-234	1.896E-08	1.642E-16	9.536E-16	1.095E-14	3.846E-14	7.935E-13	1.392E-12	1.024E-12	1.854E-13
U-238+D1	Th-230	1.896E-08	1.756E-21	8.331E-21	8.057E-20	2.679E-19	5.223E-18	1.784E-17	1.467E-16	2.031E-16
U-238+D1	Ra-226+D	1.896E-08	1.595E-19	4.754E-19	1.903E-18	3.465E-18	2.134E-17	8.076E-17	2.954E-15	9.377E-15
U-238+D1	Pb-210+D2	1.896E-08	1.974E-18	5.881E-18	2.341E-17	4.192E-17	1.664E-16	3.137E-16	2.159E-15	5.984E-15
U-238+D1	∑DSR(j)		6.142E-10	7.307E-10	1.191E-09	1.755E-09	5.810E-09	5.084E-09	7.534E-10	6.861E-11
U-238+D1	U-238+D1	2.096E-04	6.790E-06	8.078E-06	1.317E-05	1.940E-05	6.423E-05	5.619E-05	8.317E-06	7.562E-07
U-238+D1	U-234	2.096E-04	1.815E-12	1.054E-11	1.210E-10	4.251E-10	8.772E-09	1.539E-08	1.132E-08	2.050E-09
U-238+D1	Th-230	2.096E-04	1.941E-17	9.210E-17	8.907E-16	2.961E-15	5.774E-14	1.972E-13	1.621E-12	2.245E-12
U-238+D1	Ra-226+D1	2.096E-04	1.764E-15	5.261E-15	2.124E-14	3.968E-14	3.742E-13	1.857E-12	8.167E-11	2.610E-10
U-238+D1	Pb-210+D	2.096E-04	5.976E-14	1.780E-13	7.085E-13	1.269E-12	5.033E-12	9.449E-12	6.102E-11	1.660E-10
U-238+D1	∑DSR(j)		6.790E-06	8.078E-06	1.317E-05	1.940E-05	6.423E-05	5.621E-05	8.328E-06	7.587E-07
U-238+D1	U-238+D1	2.767E-10	8.963E-12	1.066E-11	1.738E-11	2.561E-11	8.478E-11	7.417E-11	1.098E-11	9.982E-13
U-238+D1	U-234	2.767E-10	2.396E-18	1.392E-17	1.597E-16	5.612E-16	1.158E-14	2.031E-14	1.494E-14	2.706E-15
U-238+D1	Th-230	2.767E-10	2.562E-23	1.216E-22	1.176E-21	3.909E-21	7.622E-20	2.603E-19	2.140E-18	2.964E-18
U-238+D1	Ra-226+D1	2.767E-10	2.328E-21	6.944E-21	2.803E-20	5.238E-20	4.940E-19	2.452E-18	1.078E-16	3.445E-16
U-238+D1	Pb-210+D1	2.767E-10	2.887E-20	8.598E-20	3.422E-19	6.129E-19	2.431E-18	4.564E-18	2.953E-17	8.038E-17
U-238+D1	∑DSR(j)		8.963E-12	1.066E-11	1.738E-11	2.561E-11	8.479E-11	7.419E-11	1.099E-11	1.001E-12
U-238+D1	U-238+D1	3.983E-12	1.290E-13	1.535E-13	2.502E-13	3.686E-13	1.220E-12	1.068E-12	1.580E-13	1.437E-14
U-238+D1	U-234	3.983E-12	3.448E-20	2.003E-19	2.299E-18	8.078E-18	1.667E-16	2.923E-16	2.150E-16	3.895E-17
U-238+D1	Th-230	3.983E-12	3.687E-25	1.750E-24	1.692E-23	5.626E-23	1.097E-21	3.747E-21	3.080E-20	4.266E-20
U-238+D1	Ra-226+D1	3.983E-12	3.352E-23	9.995E-23	4.035E-22	7.540E-22	7.110E-21	3.529E-20	1.552E-18	4.959E-18
U-238+D1	Pb-210+D2	3.983E-12	4.147E-22	1.235E-21	4.916E-21	8.804E-21	3.495E-20	6.589E-20	4.536E-19	1.257E-18
U-238+D1	∑DSR(j)		1.290E-13	1.535E-13	2.502E-13	3.686E-13	1.220E-12	1.068E-12	1.582E-13	1.441E-14
U-238+D1	U-238+D1	1.994E-04	6.460E-06	7.685E-06	1.253E-05	1.846E-05	6.111E-05	5.346E-05	7.913E-06	7.195E-07
U-238+D1	U-234	1.994E-04	1.727E-12	1.003E-11	1.151E-10	4.045E-10	8.346E-09	1.464E-08	1.077E-08	1.950E-09
U-238+D1	Th-230	1.994E-04	1.846E-17	8.762E-17	8.474E-16	2.817E-15	5.494E-14	1.876E-13	1.542E-12	2.136E-12
U-238+D1	Ra-226+D2	1.994E-04	1.677E-15	4.998E-15	1.999E-14	3.633E-14	2.144E-13	7.797E-13	2.754E-11	8.727E-11
U-238+D1	Pb-210+D	1.994E-04	5.686E-14	1.694E-13	6.741E-13	1.207E-12	4.789E-12	8.990E-12	5.806E-11	1.579E-10
U-238+D1	∑DSR(j)		6.460E-06	7.685E-06	1.253E-05	1.846E-05	6.111E-05	5.348E-05	7.924E-06	7.217E-07

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.633E-10	8.528E-12	1.014E-11	1.654E-11	2.436E-11	8.066E-11	7.057E-11	1.045E-11	9.497E-13
U-238+D1	U-234	2.633E-10	2.279E-18	1.324E-17	1.520E-16	5.339E-16	1.102E-14	1.932E-14	1.421E-14	2.575E-15
U-238+D1	Th-230	2.633E-10	2.437E-23	1.157E-22	1.119E-21	3.719E-21	7.252E-20	2.477E-19	2.036E-18	2.820E-18
U-238+D1	Ra-226+D2	2.633E-10	2.214E-21	6.597E-21	2.638E-20	4.796E-20	2.831E-19	1.029E-18	3.635E-17	1.152E-16
U-238+D1	Pb-210+D1	2.633E-10	2.746E-20	8.180E-20	3.256E-19	5.830E-19	2.313E-18	4.342E-18	2.810E-17	7.647E-17
U-238+D1	∑DSR(j)		8.528E-12	1.014E-11	1.654E-11	2.436E-11	8.067E-11	7.059E-11	1.046E-11	9.525E-13
U-238+D1	U-238+D1	3.789E-12	1.227E-13	1.460E-13	2.381E-13	3.507E-13	1.161E-12	1.016E-12	1.503E-13	1.367E-14
U-238+D1	U-234	3.789E-12	3.281E-20	1.906E-19	2.188E-18	7.685E-18	1.586E-16	2.781E-16	2.046E-16	3.706E-17
U-238+D1	Th-230	3.789E-12	3.508E-25	1.665E-24	1.610E-23	5.353E-23	1.044E-21	3.565E-21	2.931E-20	4.059E-20
U-238+D1	Ra-226+D2	3.789E-12	3.187E-23	9.496E-23	3.798E-22	6.903E-22	4.074E-21	1.481E-20	5.232E-19	1.658E-18
U-238+D1	Pb-210+D2	3.789E-12	3.945E-22	1.175E-21	4.678E-21	8.377E-21	3.326E-20	6.269E-20	4.315E-19	1.196E-18
U-238+D1	∑DSR(j)		1.227E-13	1.460E-13	2.381E-13	3.507E-13	1.161E-12	1.016E-12	1.506E-13	1.371E-14
U-238+D1	U-238+D1	4.189E-08	1.357E-09	1.614E-09	2.632E-09	3.877E-09	1.283E-08	1.123E-08	1.662E-09	1.511E-10
U-238+D1	U-234	4.189E-08	3.627E-16	2.107E-15	2.418E-14	8.496E-14	1.753E-12	3.075E-12	2.261E-12	4.097E-13
U-238+D1	Th-230	4.189E-08	3.878E-21	1.841E-20	1.780E-19	5.918E-19	1.154E-17	3.941E-17	3.240E-16	4.487E-16
U-238+D1	Ra-226+D3	4.189E-08	3.523E-19	1.051E-18	4.239E-18	7.906E-18	7.267E-17	3.565E-16	1.558E-14	4.977E-14
U-238+D1	Pb-210+D	4.189E-08	1.194E-17	3.557E-17	1.416E-16	2.536E-16	1.006E-15	1.888E-15	1.219E-14	3.317E-14
U-238+D1	∑DSR(j)		1.357E-09	1.614E-09	2.632E-09	3.877E-09	1.284E-08	1.123E-08	1.664E-09	1.516E-10
U-238+D1	U-238+D1	5.530E-14	1.791E-15	2.131E-15	3.474E-15	5.117E-15	1.694E-14	1.482E-14	2.194E-15	1.995E-16
U-238+D1	U-234	5.530E-14	4.788E-22	2.781E-21	3.192E-20	1.121E-19	2.314E-18	4.058E-18	2.985E-18	5.408E-19
U-238+D1	Th-230	5.530E-14	5.119E-27	2.429E-26	2.350E-25	7.811E-25	1.523E-23	5.202E-23	4.277E-22	5.923E-22
U-238+D1	Ra-226+D3	5.530E-14	4.651E-25	1.387E-24	5.595E-24	1.044E-23	9.593E-23	4.706E-22	2.056E-20	6.570E-20
U-238+D1	Pb-210+D1	5.530E-14	5.768E-24	1.718E-23	6.838E-23	1.225E-22	4.858E-22	9.121E-22	5.901E-21	1.606E-20
U-238+D1	∑DSR(j)		1.791E-15	2.131E-15	3.474E-15	5.117E-15	1.694E-14	1.483E-14	2.197E-15	2.001E-16
U-238+D1	U-238+D1	7.959E-16	2.578E-17	3.067E-17	5.000E-17	7.365E-17	2.439E-16	2.134E-16	3.158E-17	2.871E-18
U-238+D1	U-234	7.959E-16	6.891E-24	4.003E-23	4.595E-22	1.614E-21	3.331E-20	5.842E-20	4.297E-20	7.784E-21
U-238+D1	Th-230	7.959E-16	7.369E-29	3.497E-28	3.382E-27	1.124E-26	2.192E-25	7.488E-25	6.156E-24	8.526E-24
U-238+D1	Ra-226+D3	7.959E-16	6.694E-27	1.996E-26	8.053E-26	1.502E-25	1.381E-24	6.774E-24	2.960E-22	9.457E-22
U-238+D1	Pb-210+D2	7.959E-16	8.287E-26	2.468E-25	9.825E-25	1.760E-24	6.985E-24	1.317E-23	9.064E-23	2.512E-22
U-238+D1	∑DSR(j)		2.578E-17	3.067E-17	5.000E-17	7.366E-17	2.439E-16	2.134E-16	3.162E-17	2.880E-18
U-238+D1	U-238+D1	1.997E-07	6.468E-09	7.695E-09	1.254E-08	1.848E-08	6.118E-08	5.353E-08	7.922E-09	7.204E-10
U-238+D1	U-234	1.997E-07	1.729E-15	1.004E-14	1.153E-13	4.050E-13	8.356E-12	1.466E-11	1.078E-11	1.953E-12
U-238+D1	Th-230	1.997E-07	1.849E-20	8.773E-20	8.485E-19	2.821E-18	5.500E-17	1.879E-16	1.544E-15	2.139E-15
U-238+D1	Ra-226+D4	1.997E-07	1.678E-18	5.000E-18	1.990E-17	3.564E-17	1.428E-16	2.792E-16	2.099E-15	5.623E-15
U-238+D1	Pb-210+D	1.997E-07	5.693E-17	1.696E-16	6.750E-16	1.209E-15	4.795E-15	9.001E-15	5.813E-14	1.581E-13
U-238+D1	∑DSR(j)		6.468E-09	7.695E-09	1.254E-08	1.848E-08	6.119E-08	5.354E-08	7.933E-09	7.225E-10

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.636E-13	8.538E-15	1.016E-14	1.656E-14	2.439E-14	8.076E-14	7.065E-14	1.046E-14	9.509E-16
U-238+D1	U-234	2.636E-13	2.282E-21	1.326E-20	1.522E-19	5.346E-19	1.103E-17	1.935E-17	1.423E-17	2.578E-18
U-238+D1	Th-230	2.636E-13	2.440E-26	1.158E-25	1.120E-24	3.723E-24	7.261E-23	2.480E-22	2.039E-21	2.823E-21
U-238+D1	Ra-226+D4	2.636E-13	2.215E-24	6.599E-24	2.627E-23	4.705E-23	1.885E-22	3.686E-22	2.770E-21	7.423E-21
U-238+D1	Pb-210+D1	2.636E-13	2.750E-23	8.191E-23	3.260E-22	5.838E-22	2.316E-21	4.348E-21	2.813E-20	7.657E-20
U-238+D1	∑DSR(j)		8.538E-15	1.016E-14	1.656E-14	2.439E-14	8.077E-14	7.067E-14	1.047E-14	9.536E-16
U-238+D1	U-238+D1	3.794E-15	1.229E-16	1.462E-16	2.383E-16	3.511E-16	1.162E-15	1.017E-15	1.505E-16	1.369E-17
U-238+D1	U-234	3.794E-15	3.285E-23	1.908E-22	2.190E-21	7.694E-21	1.588E-19	2.785E-19	2.048E-19	3.710E-20
U-238+D1	Th-230	3.794E-15	3.512E-28	1.667E-27	1.612E-26	5.359E-26	1.045E-24	3.569E-24	2.934E-23	4.064E-23
U-238+D1	Ra-226+D4	3.794E-15	3.189E-26	9.499E-26	3.781E-25	6.773E-25	2.713E-24	5.305E-24	3.988E-23	1.068E-22
U-238+D1	Pb-210+D2	3.794E-15	3.950E-25	1.177E-24	4.683E-24	8.387E-24	3.330E-23	6.277E-23	4.321E-22	1.197E-21
U-238+D1	∑DSR(j)		1.229E-16	1.462E-16	2.384E-16	3.511E-16	1.163E-15	1.017E-15	1.507E-16	1.373E-17

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	2.579E+01	2.640E+01	2.897E+01	3.254E+01	8.252E+01	2.640E+02	2.899E+06	3.256E+11
Ra-226	7.725E+00	7.721E+00	7.702E+00	7.672E+00	7.404E+00	7.316E+00	8.813E+00	1.132E+01
Sr-90	2.259E+02	8.469E+01	2.759E+01	1.821E+01	1.337E+02	1.619E+03	7.486E+11	*1.366E+14
U-238	4.307E+02	3.662E+02	2.300E+02	1.581E+02	4.865E+01	5.563E+01	3.754E+02	4.120E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 9.36 ± 0.02 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	1.330E+00	0.000E+00	5.816E-01	2.579E+01	4.678E-01	3.207E+01
Ra-226	9.000E-02	91.9 ± 0.2	2.051E+00	7.313E+00	1.954E+00	7.676E+00
Sr-90	3.300E-01	9.62 ± 0.02	8.286E-01	1.810E+01	8.241E-01	1.820E+01
U-238	6.400E-01	55.6 ± 0.1	3.331E-01	4.504E+01	9.113E-02	1.646E+02

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	7.735E-01	7.558E-01	6.886E-01	6.130E-01	2.418E-01	7.557E-02	6.883E-06	6.127E-11
Ra-226	Ra-226	9.996E-01	1.746E-01	1.744E-01	1.740E-01	1.735E-01	1.695E-01	1.645E-01	1.298E-01	9.653E-02
Ra-226	Ra-226	1.319E-06	2.304E-07	2.303E-07	2.297E-07	2.290E-07	2.237E-07	2.172E-07	1.713E-07	1.274E-07
Ra-226	U-238	1.599E-03	8.612E-15	2.566E-14	1.027E-13	1.871E-13	1.152E-12	4.359E-12	1.595E-10	5.062E-10
Ra-226	U-238	2.111E-09	1.137E-20	3.388E-20	1.356E-19	2.469E-19	1.521E-18	5.754E-18	2.105E-16	6.681E-16
Ra-226	U-238	3.039E-11	1.636E-22	4.876E-22	1.952E-21	3.554E-21	2.189E-20	8.283E-20	3.030E-18	9.617E-18
Ra-226	U-238	9.980E-01	5.374E-12	1.601E-11	6.409E-11	1.167E-10	7.189E-10	2.720E-09	9.951E-08	3.158E-07
Ra-226	U-238	1.317E-06	7.094E-18	2.114E-17	8.460E-17	1.541E-16	9.490E-16	3.591E-15	1.314E-13	4.169E-13
Ra-226	U-238	1.896E-08	1.021E-19	3.043E-19	1.218E-18	2.218E-18	1.366E-17	5.168E-17	1.891E-15	6.001E-15
Ra-226	∑DOSE(j)		1.746E-01	1.745E-01	1.740E-01	1.735E-01	1.695E-01	1.645E-01	1.298E-01	9.653E-02
Pb-210	Ra-226	9.996E-01	8.764E-05	2.707E-04	1.105E-03	2.319E-03	1.276E-02	1.990E-02	2.329E-02	2.265E-02
Pb-210	Ra-226	2.100E-04	1.841E-08	5.686E-08	2.321E-07	4.871E-07	2.680E-06	4.180E-06	4.892E-06	4.757E-06
Pb-210	Ra-226	1.998E-04	1.751E-08	5.410E-08	2.208E-07	4.635E-07	2.550E-06	3.977E-06	4.654E-06	4.526E-06
Pb-210	Ra-226	4.196E-08	3.679E-12	1.136E-11	4.637E-11	9.735E-11	5.356E-10	8.354E-10	9.776E-10	9.507E-10
Pb-210	Ra-226	2.000E-07	1.754E-11	5.416E-11	2.210E-10	4.640E-10	2.553E-09	3.982E-09	4.660E-09	4.532E-09
Pb-210	U-238	1.599E-03	2.918E-13	8.693E-13	3.460E-12	6.196E-12	2.458E-11	4.614E-11	2.980E-10	8.106E-10
Pb-210	U-238	3.359E-07	6.131E-17	1.826E-16	7.268E-16	1.302E-15	5.163E-15	9.692E-15	6.259E-14	1.703E-13
Pb-210	U-238	3.196E-07	5.833E-17	1.737E-16	6.915E-16	1.238E-15	4.912E-15	9.221E-15	5.955E-14	1.620E-13
Pb-210	U-238	6.713E-11	1.225E-20	3.649E-20	1.452E-19	2.601E-19	1.032E-18	1.937E-18	1.251E-17	3.403E-17
Pb-210	U-238	3.200E-10	5.839E-20	1.739E-19	6.922E-19	1.240E-18	4.917E-18	9.232E-18	5.962E-17	1.622E-16
Pb-210	U-238	9.980E-01	1.821E-10	5.424E-10	2.159E-09	3.866E-09	1.534E-08	2.879E-08	1.859E-07	5.058E-07
Pb-210	U-238	2.096E-04	3.825E-14	1.139E-13	4.535E-13	8.121E-13	3.221E-12	6.048E-12	3.905E-11	1.062E-10
Pb-210	U-238	1.994E-04	3.639E-14	1.084E-13	4.314E-13	7.727E-13	3.065E-12	5.754E-12	3.716E-11	1.011E-10
Pb-210	U-238	4.189E-08	7.644E-18	2.277E-17	9.062E-17	1.623E-16	6.437E-16	1.209E-15	7.805E-15	2.123E-14
Pb-210	U-238	1.997E-07	3.644E-17	1.085E-16	4.320E-16	7.736E-16	3.069E-15	5.761E-15	3.720E-14	1.012E-13
Pb-210	∑DOSE(j)		8.768E-05	2.708E-04	1.105E-03	2.320E-03	1.277E-02	1.991E-02	2.330E-02	2.266E-02
Pb-210	Ra-226	1.319E-06	4.839E-11	1.487E-10	5.953E-10	1.229E-09	6.463E-09	9.963E-09	1.154E-08	1.115E-08
Pb-210	Ra-226	1.899E-08	3.690E-12	1.099E-11	3.903E-11	7.147E-11	2.416E-10	3.169E-10	3.088E-10	2.665E-10
Pb-210	Ra-226	2.771E-10	1.016E-14	3.123E-14	1.250E-13	2.581E-13	1.358E-12	2.093E-12	2.423E-12	2.343E-12
Pb-210	Ra-226	2.637E-10	9.670E-15	2.971E-14	1.190E-13	2.456E-13	1.292E-12	1.991E-12	2.306E-12	2.229E-12
Pb-210	Ra-226	5.538E-14	2.031E-18	6.240E-18	2.499E-17	5.159E-17	2.713E-16	4.182E-16	4.843E-16	4.682E-16
Pb-210	Ra-226	2.640E-13	9.682E-18	2.975E-17	1.191E-16	2.459E-16	1.293E-15	1.993E-15	2.309E-15	2.232E-15
Pb-210	U-238	2.111E-09	1.409E-19	4.198E-19	1.671E-18	2.992E-18	1.187E-17	2.229E-17	1.442E-16	3.925E-16
Pb-210	U-238	4.434E-13	2.960E-23	8.818E-23	3.510E-22	6.285E-22	2.493E-21	4.681E-21	3.029E-20	8.244E-20
Pb-210	U-238	4.219E-13	2.816E-23	8.389E-23	3.339E-22	5.980E-22	2.372E-21	4.454E-21	2.882E-20	7.844E-20
Pb-210	U-238	8.862E-17	5.916E-27	1.762E-26	7.014E-26	1.256E-25	4.982E-25	9.355E-25	6.053E-24	1.647E-23
Pb-210	U-238	4.224E-16	2.820E-26	8.400E-26	3.343E-25	5.987E-25	2.375E-24	4.459E-24	2.885E-23	7.853E-23
Pb-210	U-238	1.317E-06	8.795E-17	2.620E-16	1.043E-15	1.867E-15	7.407E-15	1.391E-14	8.998E-14	2.449E-13
Pb-210	U-238	2.767E-10	1.847E-20	5.503E-20	2.190E-19	3.922E-19	1.556E-18	2.921E-18	1.890E-17	5.144E-17
Pb-210	U-238	2.633E-10	1.757E-20	5.235E-20	2.084E-19	3.731E-19	1.480E-18	2.779E-18	1.798E-17	4.894E-17
Pb-210	U-238	5.530E-14	3.691E-24	1.100E-23	4.376E-23	7.838E-23	3.109E-22	5.837E-22	3.777E-21	1.028E-20
Pb-210	U-238	2.636E-13	1.760E-23	5.242E-23	2.086E-22	3.737E-22	1.482E-21	2.783E-21	1.800E-20	4.900E-20
Pb-210	∑DOSE(j)		5.210E-11	1.597E-10	6.345E-10	1.301E-09	6.708E-09	1.028E-08	1.185E-08	1.142E-08
Ra-226	Ra-226	1.899E-08	3.317E-09	3.315E-09	3.307E-09	3.297E-09	3.220E-09	3.126E-09	2.466E-09	1.834E-09
Ra-226	Ra-226	2.100E-04	9.518E-05	9.513E-05	9.490E-05	9.462E-05	9.240E-05	8.969E-05	7.072E-05	5.255E-05
Ra-226	∑DOSE(j)		9.519E-05	9.513E-05	9.490E-05	9.462E-05	9.240E-05	8.970E-05	7.072E-05	5.255E-05

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	1.256E-10	1.256E-10	1.253E-10	1.249E-10	1.220E-10	1.184E-10	9.335E-11	6.937E-11
Ra-226	Ra-226	3.989E-12	1.808E-12	1.807E-12	1.803E-12	1.798E-12	1.756E-12	1.704E-12	1.344E-12	9.985E-13
Ra-226	∑DOSE(j)		1.274E-10	1.274E-10	1.271E-10	1.267E-10	1.237E-10	1.201E-10	9.470E-11	7.037E-11
Pb-210	Ra-226	3.989E-12	7.751E-16	2.309E-15	8.198E-15	1.501E-14	5.074E-14	6.656E-14	6.486E-14	5.597E-14
Pb-210	Ra-226	3.795E-12	7.375E-16	2.197E-15	7.800E-15	1.428E-14	4.828E-14	6.333E-14	6.171E-14	5.325E-14
Pb-210	Ra-226	7.972E-16	1.549E-19	4.614E-19	1.638E-18	3.000E-18	1.014E-17	1.330E-17	1.296E-17	1.118E-17
Pb-210	Ra-226	3.800E-15	7.384E-19	2.199E-18	7.809E-18	1.430E-17	4.834E-17	6.340E-17	6.178E-17	5.331E-17
Pb-210	U-238	3.039E-11	2.025E-21	6.031E-21	2.401E-20	4.299E-20	1.707E-19	3.218E-19	2.215E-18	6.138E-18
Pb-210	U-238	6.383E-15	4.253E-25	1.267E-24	5.042E-24	9.030E-24	3.585E-23	6.757E-23	4.652E-22	1.289E-21
Pb-210	U-238	6.073E-15	4.046E-25	1.205E-24	4.797E-24	8.592E-24	3.411E-23	6.430E-23	4.426E-22	1.227E-21
Pb-210	U-238	1.276E-18	8.499E-29	2.532E-28	1.008E-27	1.805E-27	7.164E-27	1.351E-26	9.297E-26	2.576E-25
Pb-210	U-238	6.080E-18	4.052E-28	1.207E-27	4.803E-27	8.602E-27	3.415E-26	6.438E-26	4.431E-25	1.228E-24
Pb-210	U-238	1.896E-08	1.263E-18	3.764E-18	1.498E-17	2.683E-17	1.065E-16	2.008E-16	1.382E-15	3.830E-15
Pb-210	U-238	3.983E-12	2.654E-22	7.905E-22	3.146E-21	5.635E-21	2.237E-20	4.217E-20	2.903E-19	8.044E-19
Pb-210	U-238	3.789E-12	2.525E-22	7.521E-22	2.994E-21	5.361E-21	2.128E-20	4.012E-20	2.762E-19	7.654E-19
Pb-210	U-238	7.959E-16	5.304E-26	1.580E-25	6.288E-25	1.126E-24	4.470E-24	8.428E-24	5.801E-23	1.608E-22
Pb-210	U-238	3.794E-15	2.528E-25	7.530E-25	2.997E-24	5.368E-24	2.131E-23	4.017E-23	2.765E-22	7.663E-22
Pb-210	∑DOSE(j)		1.515E-15	4.512E-15	1.602E-14	2.934E-14	9.918E-14	1.302E-13	1.280E-13	1.131E-13
Ra-226	Ra-226	1.998E-04	3.066E-05	3.064E-05	3.057E-05	3.048E-05	2.977E-05	2.890E-05	2.280E-05	1.696E-05
Ra-226	Ra-226	2.637E-10	4.047E-11	4.045E-11	4.035E-11	4.023E-11	3.929E-11	3.815E-11	3.010E-11	2.239E-11
Ra-226	U-238	3.196E-07	1.720E-18	5.126E-18	2.050E-17	3.726E-17	2.199E-16	7.996E-16	2.824E-14	8.951E-14
Ra-226	U-238	4.219E-13	2.271E-24	6.766E-24	2.706E-23	4.919E-23	2.903E-22	1.056E-21	3.728E-20	1.182E-19
Ra-226	U-238	6.073E-15	3.268E-26	9.739E-26	3.895E-25	7.080E-25	4.179E-24	1.519E-23	5.366E-22	1.701E-21
Ra-226	U-238	1.994E-04	1.073E-15	3.199E-15	1.279E-14	2.325E-14	1.372E-13	4.990E-13	1.762E-11	5.585E-11
Ra-226	U-238	2.633E-10	1.417E-21	4.222E-21	1.689E-20	3.069E-20	1.812E-19	6.587E-19	2.326E-17	7.373E-17
Ra-226	U-238	3.789E-12	2.039E-23	6.077E-23	2.431E-22	4.418E-22	2.608E-21	9.481E-21	3.348E-19	1.061E-18
Ra-226	∑DOSE(j)		3.066E-05	3.064E-05	3.057E-05	3.048E-05	2.977E-05	2.890E-05	2.280E-05	1.696E-05
Ra-226	Ra-226	3.795E-12	5.826E-13	5.822E-13	5.808E-13	5.791E-13	5.656E-13	5.491E-13	4.333E-13	3.223E-13
Ra-226	Ra-226	4.196E-08	1.813E-08	1.812E-08	1.808E-08	1.803E-08	1.760E-08	1.709E-08	1.347E-08	1.001E-08
Ra-226	∑DOSE(j)		1.814E-08	1.812E-08	1.808E-08	1.803E-08	1.760E-08	1.709E-08	1.348E-08	1.001E-08
Ra-226	Ra-226	5.538E-14	2.394E-14	2.392E-14	2.387E-14	2.380E-14	2.324E-14	2.256E-14	1.779E-14	1.322E-14
Ra-226	Ra-226	7.972E-16	3.446E-16	3.444E-16	3.435E-16	3.425E-16	3.345E-16	3.247E-16	2.560E-16	1.902E-16
Ra-226	∑DOSE(j)		2.428E-14	2.427E-14	2.421E-14	2.414E-14	2.357E-14	2.288E-14	1.804E-14	1.341E-14
Ra-226	Ra-226	2.000E-07	2.911E-10	2.910E-10	2.906E-10	2.901E-10	2.865E-10	2.821E-10	2.488E-10	2.127E-10
Ra-226	Ra-226	2.640E-13	3.842E-16	3.841E-16	3.836E-16	3.830E-16	3.782E-16	3.723E-16	3.285E-16	2.807E-16
Ra-226	U-238	3.200E-10	1.721E-21	5.128E-21	2.041E-20	3.656E-20	1.465E-19	2.864E-19	2.153E-18	5.768E-18
Ra-226	U-238	4.224E-16	2.272E-27	6.769E-27	2.694E-26	4.826E-26	1.933E-25	3.780E-25	2.841E-24	7.613E-24
Ra-226	U-238	6.080E-18	3.271E-29	9.743E-29	3.878E-28	6.945E-28	2.782E-27	5.441E-27	4.090E-26	1.096E-25
Ra-226	U-238	1.997E-07	1.074E-18	3.200E-18	1.274E-17	2.281E-17	9.139E-17	1.787E-16	1.343E-15	3.599E-15
Ra-226	U-238	2.636E-13	1.418E-24	4.224E-24	1.681E-23	3.011E-23	1.206E-22	2.359E-22	1.773E-21	4.751E-21
Ra-226	U-238	3.794E-15	2.041E-26	6.079E-26	2.420E-25	4.334E-25	1.736E-24	3.395E-24	2.552E-23	6.838E-23
Ra-226	∑DOSE(j)		2.911E-10	2.910E-10	2.906E-10	2.901E-10	2.865E-10	2.821E-10	2.488E-10	2.127E-10
Ra-226	Ra-226	3.800E-15	5.530E-18	5.528E-18	5.521E-18	5.513E-18	5.444E-18	5.359E-18	4.728E-18	4.041E-18

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	2.191E-02	5.845E-02	1.794E-01	2.719E-01	3.702E-02	3.058E-03	6.612E-12	9.641E-23
U-238	U-238	5.450E-07	1.575E-09	3.608E-09	1.165E-08	2.149E-08	9.229E-08	8.134E-08	1.202E-08	1.090E-09
U-238	U-238	1.599E-03	1.591E-03	1.590E-03	1.586E-03	1.582E-03	1.547E-03	1.248E-03	1.880E-04	1.760E-05
U-238	∑DOSE(j)		1.591E-03	1.590E-03	1.586E-03	1.582E-03	1.547E-03	1.249E-03	1.880E-04	1.761E-05
U-234	U-238	1.599E-03	8.862E-12	5.148E-11	5.909E-10	2.076E-09	4.283E-08	7.513E-08	5.526E-08	1.001E-08
U-234	U-238	3.039E-11	1.684E-19	9.781E-19	1.123E-17	3.944E-17	8.138E-16	1.427E-15	1.050E-15	1.902E-16
U-234	U-238	3.359E-07	1.861E-15	1.081E-14	1.241E-13	4.360E-13	8.997E-12	1.578E-11	1.161E-11	2.103E-12
U-234	U-238	4.434E-13	2.457E-21	1.427E-20	1.638E-19	5.756E-19	1.188E-17	2.083E-17	1.532E-17	2.775E-18
U-234	U-238	6.383E-15	3.537E-23	2.054E-22	2.358E-21	8.285E-21	1.709E-19	2.998E-19	2.205E-19	3.995E-20
U-234	U-238	3.196E-07	1.771E-15	1.029E-14	1.181E-13	4.149E-13	8.560E-12	1.501E-11	1.104E-11	2.000E-12
U-234	U-238	4.219E-13	2.338E-21	1.358E-20	1.559E-19	5.476E-19	1.130E-17	1.982E-17	1.458E-17	2.641E-18
U-234	U-238	6.073E-15	3.365E-23	1.955E-22	2.244E-21	7.882E-21	1.626E-19	2.852E-19	2.098E-19	3.801E-20
U-234	U-238	6.713E-11	3.720E-19	2.161E-18	2.480E-17	8.714E-17	1.798E-15	3.153E-15	2.319E-15	4.202E-16
U-234	U-238	8.862E-17	4.910E-25	2.852E-24	3.274E-23	1.150E-22	2.373E-21	4.162E-21	3.062E-21	5.546E-22
U-234	U-238	1.276E-18	7.068E-27	4.105E-26	4.713E-25	1.656E-24	3.416E-23	5.991E-23	4.407E-23	7.983E-24
U-234	U-238	3.200E-10	1.773E-18	1.030E-17	1.182E-16	4.154E-16	8.570E-15	1.503E-14	1.106E-14	2.003E-15
U-234	U-238	4.224E-16	2.341E-24	1.360E-23	1.561E-22	5.483E-22	1.131E-20	1.984E-20	1.459E-20	2.644E-21
U-234	U-238	6.080E-18	3.369E-26	1.957E-25	2.246E-24	7.892E-24	1.628E-22	2.856E-22	2.101E-22	3.805E-23
U-234	U-238	9.980E-01	5.530E-09	3.212E-08	3.687E-07	1.295E-06	2.673E-05	4.688E-05	3.448E-05	6.246E-06
U-234	U-238	1.317E-06	7.300E-15	4.240E-14	4.867E-13	1.710E-12	3.528E-11	6.188E-11	4.551E-11	8.245E-12
U-234	U-238	1.896E-08	1.051E-16	6.103E-16	7.006E-15	2.461E-14	5.078E-13	8.907E-13	6.551E-13	1.187E-13
U-234	U-238	2.096E-04	1.162E-12	6.747E-12	7.745E-11	2.721E-10	5.614E-09	9.846E-09	7.243E-09	1.312E-09
U-234	U-238	2.767E-10	1.533E-18	8.906E-18	1.022E-16	3.592E-16	7.411E-15	1.300E-14	9.560E-15	1.732E-15
U-234	U-238	3.983E-12	2.207E-20	1.282E-19	1.472E-18	5.170E-18	1.067E-16	1.871E-16	1.376E-16	2.493E-17
U-234	U-238	1.994E-04	1.105E-12	6.419E-12	7.369E-11	2.589E-10	5.341E-09	9.368E-09	6.891E-09	1.248E-09
U-234	U-238	2.633E-10	1.459E-18	8.473E-18	9.727E-17	3.417E-16	7.051E-15	1.237E-14	9.096E-15	1.648E-15
U-234	U-238	3.789E-12	2.100E-20	1.220E-19	1.400E-18	4.918E-18	1.015E-16	1.780E-16	1.309E-16	2.372E-17
U-234	U-238	4.189E-08	2.321E-16	1.348E-15	1.548E-14	5.437E-14	1.122E-12	1.968E-12	1.447E-12	2.622E-13
U-234	U-238	5.530E-14	3.064E-22	1.780E-21	2.043E-20	7.177E-20	1.481E-18	2.597E-18	1.910E-18	3.461E-19
U-234	U-238	7.959E-16	4.410E-24	2.562E-23	2.941E-22	1.033E-21	2.132E-20	3.739E-20	2.750E-20	4.982E-21
U-234	U-238	1.997E-07	1.106E-15	6.427E-15	7.378E-14	2.592E-13	5.348E-12	9.379E-12	6.899E-12	1.250E-12
U-234	U-238	2.636E-13	1.461E-21	8.483E-21	9.738E-20	3.421E-19	7.059E-18	1.238E-17	9.107E-18	1.650E-18
U-234	U-238	3.794E-15	2.102E-23	1.221E-22	1.402E-21	4.924E-21	1.016E-19	1.782E-19	1.311E-19	2.375E-20
U-234	∑DOSE(j)		5.541E-09	3.219E-08	3.695E-07	1.298E-06	2.678E-05	4.697E-05	3.455E-05	6.259E-06
Th-230	U-238	1.599E-03	9.477E-17	4.497E-16	4.349E-15	1.446E-14	2.820E-13	9.630E-13	7.916E-12	1.096E-11
Th-230	U-238	3.039E-11	1.801E-24	8.545E-24	8.264E-23	2.747E-22	5.357E-21	1.830E-20	1.504E-19	2.083E-19
Th-230	U-238	3.359E-07	1.990E-20	9.446E-20	9.135E-19	3.037E-18	5.922E-17	2.023E-16	1.663E-15	2.303E-15
Th-230	U-238	4.434E-13	2.627E-26	1.247E-25	1.206E-24	4.009E-24	7.818E-23	2.670E-22	2.195E-21	3.040E-21
Th-230	U-238	6.383E-15	3.782E-28	1.795E-27	1.736E-26	5.771E-26	1.125E-24	3.843E-24	3.159E-23	4.376E-23
Th-230	U-238	3.196E-07	1.894E-20	8.987E-20	8.692E-19	2.890E-18	5.635E-17	1.924E-16	1.582E-15	2.191E-15
Th-230	U-238	4.219E-13	2.500E-26	1.186E-25	1.147E-24	3.814E-24	7.438E-23	2.540E-22	2.088E-21	2.892E-21
Th-230	U-238	6.073E-15	3.598E-28	1.708E-27	1.651E-26	5.490E-26	1.071E-24	3.656E-24	3.006E-23	4.163E-23
Th-230	U-238	6.713E-11	3.978E-24	1.888E-23	1.826E-22	6.069E-22	1.184E-20	4.042E-20	3.323E-19	4.602E-19
Th-230	U-238	8.862E-17	4.626E-30	2.456E-29	2.410E-28	8.012E-28	1.562E-26	5.336E-26	4.386E-25	6.075E-25
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	2.840E-30	1.130E-29	2.249E-28	7.680E-28	6.314E-27	8.745E-27
Th-230	U-238	3.200E-10	1.896E-23	8.998E-23	8.702E-22	2.893E-21	5.642E-20	1.927E-19	1.584E-18	2.194E-18

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	2.478E-29	1.188E-28	1.149E-27	3.819E-27	7.447E-26	2.543E-25	2.091E-24	2.896E-24
Th-230	U-238	6.080E-18	0.000E+00	7.797E-31	1.622E-29	5.497E-29	1.072E-27	3.661E-27	3.009E-26	4.168E-26
Th-230	U-238	9.980E-01	5.913E-14	2.806E-13	2.714E-12	9.023E-12	1.759E-10	6.009E-10	4.940E-09	6.842E-09
Th-230	U-238	1.317E-06	7.806E-20	3.704E-19	3.582E-18	1.191E-17	2.322E-16	7.932E-16	6.521E-15	9.031E-15
Th-230	U-238	1.896E-08	1.124E-21	5.332E-21	5.157E-20	1.714E-19	3.343E-18	1.142E-17	9.386E-17	1.300E-16
Th-230	U-238	2.096E-04	1.242E-17	5.894E-17	5.701E-16	1.895E-15	3.696E-14	1.262E-13	1.038E-12	1.437E-12
Th-230	U-238	2.767E-10	1.640E-23	7.781E-23	7.525E-22	2.502E-21	4.878E-20	1.666E-19	1.370E-18	1.897E-18
Th-230	U-238	3.983E-12	2.360E-25	1.120E-24	1.083E-23	3.601E-23	7.022E-22	2.398E-21	1.971E-20	2.730E-20
Th-230	U-238	1.994E-04	1.182E-17	5.608E-17	5.424E-16	1.803E-15	3.516E-14	1.201E-13	9.872E-13	1.367E-12
Th-230	U-238	2.633E-10	1.560E-23	7.403E-23	7.159E-22	2.380E-21	4.641E-20	1.585E-19	1.303E-18	1.805E-18
Th-230	U-238	3.789E-12	2.245E-25	1.066E-24	1.030E-23	3.426E-23	6.680E-22	2.282E-21	1.876E-20	2.598E-20
Th-230	U-238	4.189E-08	2.482E-21	1.178E-20	1.139E-19	3.787E-19	7.385E-18	2.522E-17	2.073E-16	2.872E-16
Th-230	U-238	5.530E-14	3.276E-27	1.555E-26	1.504E-25	4.999E-25	9.749E-24	3.330E-23	2.737E-22	3.791E-22
Th-230	U-238	7.959E-16	4.670E-29	2.238E-28	2.164E-27	7.196E-27	1.403E-25	4.792E-25	3.940E-24	5.457E-24
Th-230	U-238	1.997E-07	1.183E-20	5.615E-20	5.430E-19	1.805E-18	3.520E-17	1.202E-16	9.884E-16	1.369E-15
Th-230	U-238	2.636E-13	1.562E-26	7.411E-26	7.168E-25	2.383E-24	4.647E-23	1.587E-22	1.305E-21	1.807E-21
Th-230	U-238	3.794E-15	2.248E-28	1.067E-27	1.032E-26	3.430E-26	6.689E-25	2.284E-24	1.878E-23	2.601E-23
Th-230	∑DOSE(j)		5.925E-14	2.812E-13	2.719E-12	9.041E-12	1.763E-10	6.021E-10	4.950E-09	6.856E-09
U-238	U-238	2.111E-09	2.101E-09	2.099E-09	2.094E-09	2.088E-09	2.042E-09	1.648E-09	2.482E-10	2.324E-11
U-238	U-238	3.039E-11	3.024E-11	3.022E-11	3.014E-11	3.005E-11	2.939E-11	2.372E-11	3.572E-12	3.345E-13
U-238	∑DOSE(j)		2.131E-09	2.130E-09	2.124E-09	2.118E-09	2.071E-09	1.672E-09	2.518E-10	2.357E-11
U-234	U-238	2.111E-09	1.170E-17	6.795E-17	7.800E-16	2.740E-15	5.654E-14	9.917E-14	7.294E-14	1.321E-14
Th-230	U-238	2.111E-09	1.251E-22	5.936E-22	5.741E-21	1.909E-20	3.722E-19	1.271E-18	1.045E-17	1.447E-17
U-238	U-238	3.359E-07	3.343E-07	3.341E-07	3.332E-07	3.322E-07	3.249E-07	2.622E-07	3.949E-08	3.698E-09
U-238	U-238	4.434E-13	4.412E-13	4.410E-13	4.399E-13	4.385E-13	4.288E-13	3.462E-13	5.213E-14	4.881E-15
U-238	∑DOSE(j)		3.343E-07	3.341E-07	3.332E-07	3.322E-07	3.249E-07	2.622E-07	3.949E-08	3.698E-09
Ra-226	U-238	3.359E-07	1.809E-18	5.395E-18	2.178E-17	4.070E-17	3.838E-16	1.905E-15	8.377E-14	2.677E-13
Ra-226	U-238	4.434E-13	2.388E-24	7.122E-24	2.875E-23	5.373E-23	5.066E-22	2.515E-21	1.106E-19	3.533E-19
Ra-226	U-238	6.383E-15	3.438E-26	1.025E-25	4.138E-25	7.733E-25	7.292E-24	3.620E-23	1.592E-21	5.086E-21
Ra-226	U-238	2.096E-04	1.129E-15	3.367E-15	1.359E-14	2.540E-14	2.395E-13	1.189E-12	5.227E-11	1.670E-10
Ra-226	U-238	2.767E-10	1.490E-21	4.444E-21	1.794E-20	3.352E-20	3.161E-19	1.569E-18	6.900E-17	2.205E-16
Ra-226	U-238	3.983E-12	2.145E-23	6.397E-23	2.582E-22	4.825E-22	4.550E-21	2.259E-20	9.932E-19	3.174E-18
Ra-226	∑DOSE(j)		1.131E-15	3.372E-15	1.361E-14	2.544E-14	2.399E-13	1.191E-12	5.236E-11	1.673E-10
U-238	U-238	6.383E-15	6.351E-15	6.347E-15	6.331E-15	6.312E-15	6.173E-15	4.983E-15	7.503E-16	7.026E-17
U-238	U-238	3.196E-07	3.180E-07	3.178E-07	3.170E-07	3.161E-07	3.091E-07	2.495E-07	3.757E-08	3.518E-09
U-238	∑DOSE(j)		3.180E-07	3.178E-07	3.170E-07	3.161E-07	3.091E-07	2.495E-07	3.757E-08	3.518E-09
U-238	U-238	4.219E-13	4.198E-13	4.195E-13	4.185E-13	4.172E-13	4.080E-13	3.293E-13	4.960E-14	4.644E-15
U-238	U-238	6.073E-15	6.043E-15	6.039E-15	6.024E-15	6.006E-15	5.873E-15	4.740E-15	7.139E-16	6.684E-17
U-238	∑DOSE(j)		4.258E-13	4.256E-13	4.245E-13	4.232E-13	4.139E-13	3.341E-13	5.031E-14	4.711E-15
U-238	U-238	6.713E-11	6.680E-11	6.676E-11	6.659E-11	6.639E-11	6.493E-11	5.241E-11	7.892E-12	7.389E-13
U-238	U-238	8.862E-17	8.818E-17	8.812E-17	8.790E-17	8.764E-17	8.570E-17	6.918E-17	1.042E-17	9.754E-19
U-238	∑DOSE(j)		6.680E-11	6.676E-11	6.659E-11	6.639E-11	6.493E-11	5.241E-11	7.892E-12	7.389E-13

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Individual Nuclide Dose Summed Over All Pathways
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	3.614E-22	1.078E-21	4.347E-21	8.108E-21	7.454E-20	3.657E-19	1.598E-17	5.105E-17
Ra-226	U-238	8.862E-17	4.769E-28	1.422E-27	5.738E-27	1.070E-26	9.839E-26	4.827E-25	2.109E-23	6.738E-23
Ra-226	U-238	1.276E-18	6.864E-30	2.045E-29	8.260E-29	1.540E-28	1.416E-27	6.948E-27	3.036E-25	9.699E-25
Ra-226	U-238	4.189E-08	2.255E-19	6.724E-19	2.713E-18	5.060E-18	4.651E-17	2.282E-16	9.971E-15	3.185E-14
Ra-226	U-238	5.530E-14	2.977E-25	8.876E-25	3.581E-24	6.679E-24	6.139E-23	3.012E-22	1.316E-20	4.205E-20
Ra-226	U-238	7.959E-16	4.284E-27	1.278E-26	5.154E-26	9.613E-26	8.837E-25	4.336E-24	1.894E-22	6.052E-22
Ra-226	∑DOSE(j)		2.259E-19	6.735E-19	2.717E-18	5.068E-18	4.659E-17	2.286E-16	9.987E-15	3.191E-14
U-238	U-238	1.276E-18	1.269E-18	1.268E-18	1.265E-18	1.261E-18	1.234E-18	9.957E-19	1.499E-19	1.404E-20
U-238	U-238	3.200E-10	3.184E-10	3.182E-10	3.174E-10	3.165E-10	3.095E-10	2.498E-10	3.762E-11	3.522E-12
U-238	∑DOSE(j)		3.184E-10	3.182E-10	3.174E-10	3.165E-10	3.095E-10	2.498E-10	3.762E-11	3.522E-12
U-238	U-238	4.224E-16	4.203E-16	4.200E-16	4.190E-16	4.177E-16	4.085E-16	3.297E-16	4.966E-17	4.649E-18
U-238	U-238	6.080E-18	6.050E-18	6.046E-18	6.031E-18	6.013E-18	5.880E-18	4.746E-18	7.148E-19	6.692E-20
U-238	∑DOSE(j)		4.264E-16	4.261E-16	4.250E-16	4.237E-16	4.144E-16	3.345E-16	5.037E-17	4.716E-18
U-238	U-238	9.980E-01	2.069E-02	2.461E-02	4.013E-02	5.911E-02	1.957E-01	1.712E-01	2.534E-02	2.304E-03
U-238	U-238	1.317E-06	2.731E-08	3.249E-08	5.297E-08	7.802E-08	2.583E-07	2.260E-07	3.345E-08	3.042E-09
U-238	∑DOSE(j)		2.069E-02	2.461E-02	4.013E-02	5.911E-02	1.957E-01	1.712E-01	2.534E-02	2.304E-03
U-238	U-238	1.896E-08	3.931E-10	4.676E-10	7.624E-10	1.123E-09	3.718E-09	3.253E-09	4.815E-10	4.378E-11
U-238	U-238	2.096E-04	4.346E-06	5.170E-06	8.428E-06	1.241E-05	4.110E-05	3.596E-05	5.323E-06	4.840E-07
U-238	∑DOSE(j)		4.346E-06	5.170E-06	8.429E-06	1.242E-05	4.111E-05	3.596E-05	5.323E-06	4.840E-07
U-238	U-238	2.767E-10	5.736E-12	6.824E-12	1.113E-11	1.639E-11	5.426E-11	4.747E-11	7.026E-12	6.389E-13
U-238	U-238	3.983E-12	8.257E-14	9.823E-14	1.601E-13	2.359E-13	7.810E-13	6.833E-13	1.011E-13	9.196E-15
U-238	∑DOSE(j)		5.819E-12	6.922E-12	1.129E-11	1.662E-11	5.504E-11	4.815E-11	7.127E-12	6.481E-13
U-238	U-238	1.994E-04	4.135E-06	4.919E-06	8.019E-06	1.181E-05	3.911E-05	3.421E-05	5.064E-06	4.605E-07
U-238	U-238	2.633E-10	5.458E-12	6.493E-12	1.058E-11	1.559E-11	5.162E-11	4.516E-11	6.685E-12	6.078E-13
U-238	∑DOSE(j)		4.135E-06	4.919E-06	8.019E-06	1.181E-05	3.911E-05	3.421E-05	5.064E-06	4.605E-07
U-238	U-238	3.789E-12	7.856E-14	9.345E-14	1.524E-13	2.244E-13	7.430E-13	6.501E-13	9.622E-14	8.749E-15
U-238	U-238	4.189E-08	8.685E-10	1.033E-09	1.684E-09	2.481E-09	8.214E-09	7.187E-09	1.064E-09	9.672E-11
U-238	∑DOSE(j)		8.685E-10	1.033E-09	1.684E-09	2.481E-09	8.215E-09	7.187E-09	1.064E-09	9.673E-11
U-238	U-238	5.530E-14	1.146E-15	1.364E-15	2.223E-15	3.275E-15	1.084E-14	9.486E-15	1.404E-15	1.277E-16
U-238	U-238	7.959E-16	1.650E-17	1.963E-17	3.200E-17	4.714E-17	1.561E-16	1.365E-16	2.021E-17	1.838E-18
U-238	∑DOSE(j)		1.163E-15	1.383E-15	2.255E-15	3.322E-15	1.100E-14	9.623E-15	1.424E-15	1.295E-16
U-238	U-238	1.997E-07	4.140E-09	4.925E-09	8.029E-09	1.183E-08	3.915E-08	3.426E-08	5.070E-09	4.610E-10
U-238	U-238	2.636E-13	5.464E-15	6.501E-15	1.060E-14	1.561E-14	5.168E-14	4.522E-14	6.693E-15	6.086E-16
U-238	∑DOSE(j)		4.140E-09	4.925E-09	8.029E-09	1.183E-08	3.915E-08	3.426E-08	5.070E-09	4.610E-10
U-238	U-238	3.794E-15	7.865E-17	9.357E-17	1.525E-16	2.247E-16	7.439E-16	6.509E-16	9.634E-17	8.760E-18

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

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.330E+00	1.299E+00	1.184E+00	1.054E+00	4.156E-01	1.298E-01	1.180E-05	1.046E-10
Ra-226	Ra-226	9.996E-01	8.996E-02	8.991E-02	8.970E-02	8.943E-02	8.733E-02	8.477E-02	6.681E-02	4.962E-02
Ra-226	Ra-226	1.319E-06	1.188E-07	1.187E-07	1.184E-07	1.180E-07	1.153E-07	1.119E-07	8.819E-08	6.550E-08
Ra-226	U-238	1.599E-03	0.000E+00	1.914E-18	2.369E-16	1.871E-15	2.118E-13	1.500E-12	7.711E-11	2.478E-10
Ra-226	U-238	2.111E-09	0.000E+00	2.526E-24	3.126E-22	2.470E-21	2.796E-19	1.980E-18	1.018E-16	3.271E-16
Ra-226	U-238	3.039E-11	0.000E+00	3.636E-26	4.500E-24	3.555E-23	4.024E-21	2.850E-20	1.465E-18	4.709E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.194E-15	1.478E-13	1.168E-12	1.322E-10	9.359E-10	4.812E-08	1.546E-07
Ra-226	U-238	1.317E-06	0.000E+00	1.576E-21	1.951E-19	1.541E-18	1.744E-16	1.235E-15	6.351E-14	2.041E-13
Ra-226	U-238	1.896E-08	0.000E+00	2.269E-23	2.808E-21	2.219E-20	2.511E-18	1.778E-17	9.142E-16	2.938E-15
Ra-226	∑S(j):		8.996E-02	8.991E-02	8.970E-02	8.943E-02	8.733E-02	8.477E-02	6.681E-02	4.962E-02
Pb-210	Ra-226	9.996E-01	0.000E+00	2.764E-03	1.296E-02	2.396E-02	6.872E-02	8.056E-02	6.636E-02	4.928E-02
Pb-210	Ra-226	2.100E-04	0.000E+00	5.805E-07	2.722E-06	5.033E-06	1.443E-05	1.692E-05	1.394E-05	1.035E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	5.523E-07	2.589E-06	4.788E-06	1.373E-05	1.610E-05	1.326E-05	9.848E-06
Pb-210	Ra-226	4.196E-08	0.000E+00	1.160E-10	5.439E-10	1.006E-09	2.885E-09	3.382E-09	2.785E-09	2.069E-09
Pb-210	Ra-226	2.000E-07	0.000E+00	5.529E-10	2.593E-09	4.794E-09	1.375E-08	1.612E-08	1.328E-08	9.860E-09
Pb-210	U-238	1.599E-03	0.000E+00	1.485E-20	8.978E-18	1.378E-16	6.317E-14	7.149E-13	6.625E-11	2.312E-10
Pb-210	U-238	3.359E-07	0.000E+00	3.120E-24	1.886E-21	2.895E-20	1.327E-17	1.502E-16	1.392E-14	4.855E-14
Pb-210	U-238	3.196E-07	0.000E+00	2.968E-24	1.794E-21	2.755E-20	1.262E-17	1.429E-16	1.324E-14	4.620E-14
Pb-210	U-238	6.713E-11	0.000E+00	6.234E-28	3.768E-25	5.786E-24	2.652E-21	3.001E-20	2.781E-18	9.703E-18
Pb-210	U-238	3.200E-10	0.000E+00	2.972E-27	1.796E-24	2.758E-23	1.264E-20	1.430E-19	1.326E-17	4.625E-17
Pb-210	U-238	9.980E-01	0.000E+00	9.268E-18	5.602E-15	8.602E-14	3.942E-11	4.461E-10	4.134E-08	1.442E-07
Pb-210	U-238	2.096E-04	0.000E+00	1.947E-21	1.177E-18	1.807E-17	8.280E-15	9.370E-14	8.683E-12	3.030E-11
Pb-210	U-238	1.994E-04	0.000E+00	1.852E-21	1.120E-18	1.719E-17	7.878E-15	8.915E-14	8.261E-12	2.883E-11
Pb-210	U-238	4.189E-08	0.000E+00	3.890E-25	2.351E-22	3.611E-21	1.655E-18	1.873E-17	1.735E-15	6.055E-15
Pb-210	U-238	1.997E-07	0.000E+00	1.854E-24	1.121E-21	1.721E-20	7.887E-18	8.926E-17	8.271E-15	2.886E-14
Pb-210	∑S(j):		0.000E+00	2.765E-03	1.296E-02	2.397E-02	6.875E-02	8.059E-02	6.639E-02	4.930E-02
Pb-210	Ra-226	1.319E-06	0.000E+00	3.648E-09	1.710E-08	3.163E-08	9.071E-08	1.063E-07	8.759E-08	6.505E-08
Pb-210	Ra-226	1.899E-08	0.000E+00	5.251E-11	2.462E-10	4.552E-10	1.306E-09	1.531E-09	1.261E-09	9.364E-10
Pb-210	Ra-226	2.771E-10	0.000E+00	7.662E-13	3.593E-12	6.643E-12	1.905E-11	2.234E-11	1.840E-11	1.366E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	7.290E-13	3.418E-12	6.320E-12	1.813E-11	2.125E-11	1.750E-11	1.300E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.531E-16	7.180E-16	1.328E-15	3.808E-15	4.464E-15	3.677E-15	2.731E-15
Pb-210	Ra-226	2.640E-13	0.000E+00	7.299E-16	3.422E-15	6.328E-15	1.815E-14	2.128E-14	1.753E-14	1.302E-14
Pb-210	U-238	2.111E-09	0.000E+00	1.960E-26	1.185E-23	1.820E-22	8.339E-20	9.437E-19	8.745E-17	3.051E-16
Pb-210	U-238	4.434E-13	0.000E+00	4.118E-30	2.489E-27	3.822E-26	1.752E-23	1.982E-22	1.837E-20	6.409E-20
Pb-210	U-238	4.219E-13	0.000E+00	3.918E-30	2.368E-27	3.636E-26	1.666E-23	1.886E-22	1.748E-20	6.098E-20
Pb-210	U-238	8.862E-17	0.000E+00	8.229E-34	4.974E-31	7.638E-30	3.500E-27	3.961E-26	3.671E-24	1.281E-23
Pb-210	U-238	4.224E-16	0.000E+00	3.923E-33	2.371E-30	3.641E-29	1.668E-26	1.888E-25	1.750E-23	6.105E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.223E-23	7.395E-21	1.135E-19	5.203E-17	5.889E-16	5.457E-14	1.904E-13
Pb-210	U-238	2.767E-10	0.000E+00	2.570E-27	1.553E-24	2.385E-23	1.093E-20	1.237E-19	1.146E-17	3.999E-17
Pb-210	U-238	2.633E-10	0.000E+00	2.445E-27	1.478E-24	2.269E-23	1.040E-20	1.177E-19	1.090E-17	3.805E-17
Pb-210	U-238	5.530E-14	0.000E+00	5.135E-31	3.104E-28	4.766E-27	2.184E-24	2.472E-23	2.291E-21	7.992E-21
Pb-210	U-238	2.636E-13	0.000E+00	2.448E-30	1.480E-27	2.272E-26	1.041E-23	1.178E-22	1.092E-20	3.810E-20
Pb-210	∑S(j):		0.000E+00	3.702E-09	1.736E-08	3.209E-08	9.206E-08	1.079E-07	8.889E-08	6.602E-08
Ra-226	Ra-226	1.899E-08	1.709E-09	1.708E-09	1.704E-09	1.699E-09	1.659E-09	1.611E-09	1.269E-09	9.427E-10
Ra-226	Ra-226	2.100E-04	1.890E-05	1.888E-05	1.884E-05	1.878E-05	1.834E-05	1.780E-05	1.403E-05	1.042E-05
Ra-226	∑S(j):		1.890E-05	1.889E-05	1.884E-05	1.879E-05	1.834E-05	1.781E-05	1.403E-05	1.042E-05

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	2.494E-11	2.493E-11	2.487E-11	2.480E-11	2.421E-11	2.350E-11	1.852E-11	1.376E-11
Ra-226	Ra-226	3.989E-12	3.590E-13	3.588E-13	3.580E-13	3.569E-13	3.485E-13	3.383E-13	2.666E-13	1.980E-13
Ra-226	∑S(j):		2.530E-11	2.529E-11	2.523E-11	2.515E-11	2.456E-11	2.384E-11	1.879E-11	1.396E-11
Pb-210	Ra-226	3.989E-12	0.000E+00	1.103E-14	5.171E-14	9.562E-14	2.743E-13	3.215E-13	2.648E-13	1.967E-13
Pb-210	Ra-226	3.795E-12	0.000E+00	1.049E-14	4.920E-14	9.097E-14	2.609E-13	3.059E-13	2.520E-13	1.871E-13
Pb-210	Ra-226	7.972E-16	0.000E+00	2.204E-18	1.033E-17	1.911E-17	5.481E-17	6.425E-17	5.292E-17	3.930E-17
Pb-210	Ra-226	3.800E-15	0.000E+00	1.051E-17	4.926E-17	9.108E-17	2.612E-16	3.063E-16	2.523E-16	1.873E-16
Pb-210	U-238	3.039E-11	0.000E+00	2.822E-28	1.706E-25	2.619E-24	1.200E-21	1.358E-20	1.259E-18	4.392E-18
Pb-210	U-238	6.383E-15	0.000E+00	5.927E-32	3.583E-29	5.501E-28	2.521E-25	2.853E-24	2.644E-22	9.225E-22
Pb-210	U-238	6.073E-15	0.000E+00	5.639E-32	3.409E-29	5.234E-28	2.399E-25	2.715E-24	2.515E-22	8.777E-22
Pb-210	U-238	1.276E-18	0.000E+00	1.184E-35	7.160E-33	1.099E-31	5.038E-29	5.702E-28	5.284E-26	1.844E-25
Pb-210	U-238	6.080E-18	0.000E+00	5.646E-35	3.413E-32	5.240E-31	2.402E-28	2.718E-27	2.518E-25	8.788E-25
Pb-210	U-238	1.896E-08	0.000E+00	1.761E-25	1.064E-22	1.634E-21	7.490E-19	8.476E-18	7.854E-16	2.741E-15
Pb-210	U-238	3.983E-12	0.000E+00	3.699E-29	2.236E-26	3.433E-25	1.573E-22	1.780E-21	1.650E-19	5.757E-19
Pb-210	U-238	3.789E-12	0.000E+00	3.519E-29	2.127E-26	3.266E-25	1.497E-22	1.694E-21	1.570E-19	5.477E-19
Pb-210	U-238	7.959E-16	0.000E+00	7.391E-33	4.468E-30	6.860E-29	3.144E-26	3.558E-25	3.297E-23	1.150E-22
Pb-210	U-238	3.794E-15	0.000E+00	3.523E-32	2.130E-29	3.270E-28	1.499E-25	1.696E-24	1.572E-22	5.484E-22
Pb-210	∑S(j):		0.000E+00	2.153E-14	1.010E-13	1.867E-13	5.355E-13	6.278E-13	5.179E-13	3.868E-13
Ra-226	Ra-226	1.998E-04	1.798E-05	1.797E-05	1.792E-05	1.787E-05	1.745E-05	1.694E-05	1.335E-05	9.916E-06
Ra-226	Ra-226	2.637E-10	2.373E-11	2.372E-11	2.366E-11	2.359E-11	2.304E-11	2.236E-11	1.762E-11	1.309E-11
Ra-226	U-238	3.196E-07	0.000E+00	3.825E-22	4.733E-20	3.739E-19	4.232E-17	2.997E-16	1.541E-14	4.953E-14
Ra-226	U-238	4.219E-13	0.000E+00	5.049E-28	6.248E-26	4.936E-25	5.587E-23	3.956E-22	2.034E-20	6.537E-20
Ra-226	U-238	6.073E-15	0.000E+00	7.267E-30	8.993E-28	7.105E-27	8.042E-25	5.695E-24	2.928E-22	9.410E-22
Ra-226	U-238	1.994E-04	0.000E+00	2.387E-19	2.954E-17	2.333E-16	2.641E-14	1.870E-13	9.616E-12	3.090E-11
Ra-226	U-238	2.633E-10	0.000E+00	3.150E-25	3.899E-23	3.080E-22	3.486E-20	2.469E-19	1.269E-17	4.079E-17
Ra-226	U-238	3.789E-12	0.000E+00	4.535E-27	5.612E-25	4.434E-24	5.018E-22	3.554E-21	1.827E-19	5.872E-19
Ra-226	∑S(j):		1.798E-05	1.797E-05	1.792E-05	1.787E-05	1.745E-05	1.694E-05	1.335E-05	9.916E-06
Ra-226	Ra-226	3.795E-12	3.416E-13	3.414E-13	3.406E-13	3.396E-13	3.316E-13	3.219E-13	2.537E-13	1.884E-13
Ra-226	Ra-226	4.196E-08	3.776E-09	3.774E-09	3.765E-09	3.754E-09	3.666E-09	3.558E-09	2.804E-09	2.083E-09
Ra-226	∑S(j):		3.777E-09	3.774E-09	3.765E-09	3.754E-09	3.666E-09	3.558E-09	2.805E-09	2.083E-09
Ra-226	Ra-226	5.538E-14	4.985E-15	4.982E-15	4.970E-15	4.955E-15	4.838E-15	4.697E-15	3.702E-15	2.749E-15
Ra-226	Ra-226	7.972E-16	7.175E-17	7.171E-17	7.154E-17	7.132E-17	6.964E-17	6.760E-17	5.328E-17	3.957E-17
Ra-226	∑S(j):		5.056E-15	5.053E-15	5.041E-15	5.026E-15	4.908E-15	4.764E-15	3.755E-15	2.789E-15
Ra-226	Ra-226	2.000E-07	1.800E-08	1.799E-08	1.795E-08	1.789E-08	1.747E-08	1.696E-08	1.337E-08	9.928E-09
Ra-226	Ra-226	2.640E-13	2.376E-14	2.375E-14	2.369E-14	2.362E-14	2.306E-14	2.239E-14	1.765E-14	1.310E-14
Ra-226	U-238	3.200E-10	0.000E+00	3.829E-25	4.739E-23	3.744E-22	4.238E-20	3.001E-19	1.543E-17	4.959E-17
Ra-226	U-238	4.224E-16	0.000E+00	5.055E-31	6.255E-29	4.942E-28	5.594E-26	3.961E-25	2.037E-23	6.545E-23
Ra-226	U-238	6.080E-18	0.000E+00	7.276E-33	9.004E-31	7.114E-30	8.051E-28	5.702E-27	2.931E-25	9.421E-25
Ra-226	U-238	1.997E-07	0.000E+00	2.390E-22	2.957E-20	2.336E-19	2.644E-17	1.873E-16	9.627E-15	3.094E-14
Ra-226	U-238	2.636E-13	0.000E+00	3.154E-28	3.903E-26	3.084E-25	3.490E-23	2.472E-22	1.271E-20	4.084E-20
Ra-226	U-238	3.794E-15	0.000E+00	4.540E-30	5.619E-28	4.439E-27	5.024E-25	3.558E-24	1.829E-22	5.879E-22
Ra-226	∑S(j):		1.800E-08	1.799E-08	1.795E-08	1.789E-08	1.747E-08	1.696E-08	1.337E-08	9.928E-09
Ra-226	Ra-226	3.800E-15	3.420E-16	3.418E-16	3.410E-16	3.400E-16	3.320E-16	3.222E-16	2.540E-16	1.886E-16

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	3.300E-01	3.140E-01	2.572E-01	2.005E-01	2.734E-02	2.265E-03	5.030E-12	7.667E-23
U-238	U-238	5.450E-07	3.488E-07	3.472E-07	3.407E-07	3.327E-07	2.755E-07	2.175E-07	3.292E-08	3.107E-09
U-238	U-238	1.599E-03	1.024E-03	1.019E-03	9.997E-04	9.764E-04	8.084E-04	6.384E-04	9.661E-05	9.119E-06
U-238	∑S(j):		1.024E-03	1.019E-03	1.000E-03	9.767E-04	8.086E-04	6.386E-04	9.664E-05	9.122E-06
U-234	U-238	1.599E-03	0.000E+00	2.876E-09	1.411E-08	2.757E-08	1.141E-07	1.802E-07	1.363E-07	2.571E-08
U-234	U-238	3.039E-11	0.000E+00	5.465E-17	2.681E-16	5.238E-16	2.168E-15	3.424E-15	2.590E-15	4.885E-16
U-234	U-238	3.359E-07	0.000E+00	6.042E-13	2.964E-12	5.790E-12	2.397E-11	3.786E-11	2.863E-11	5.400E-12
U-234	U-238	4.434E-13	0.000E+00	7.975E-19	3.913E-18	7.643E-18	3.164E-17	4.997E-17	3.779E-17	7.128E-18
U-234	U-238	6.383E-15	0.000E+00	1.148E-20	5.632E-20	1.100E-19	4.554E-19	7.192E-19	5.439E-19	1.026E-19
U-234	U-238	3.196E-07	0.000E+00	5.748E-13	2.820E-12	5.509E-12	2.280E-11	3.602E-11	2.724E-11	5.138E-12
U-234	U-238	4.219E-13	0.000E+00	7.588E-19	3.723E-18	7.272E-18	3.010E-17	4.754E-17	3.595E-17	6.782E-18
U-234	U-238	6.073E-15	0.000E+00	1.092E-20	5.359E-20	1.047E-19	4.333E-19	6.843E-19	5.175E-19	9.762E-20
U-234	U-238	6.713E-11	0.000E+00	1.207E-16	5.924E-16	1.157E-15	4.790E-15	7.565E-15	5.721E-15	1.079E-15
U-234	U-238	8.862E-17	0.000E+00	1.594E-22	7.819E-22	1.527E-21	6.323E-21	9.986E-21	7.551E-21	1.424E-21
U-234	U-238	1.276E-18	0.000E+00	2.294E-24	1.126E-23	2.199E-23	9.101E-23	1.437E-22	1.087E-22	2.050E-23
U-234	U-238	3.200E-10	0.000E+00	5.755E-16	2.824E-15	5.516E-15	2.283E-14	3.606E-14	2.727E-14	5.144E-15
U-234	U-238	4.224E-16	0.000E+00	7.597E-22	3.727E-21	7.281E-21	3.014E-20	4.760E-20	3.600E-20	6.790E-21
U-234	U-238	6.080E-18	0.000E+00	1.093E-23	5.365E-23	1.048E-22	4.338E-22	6.851E-22	5.181E-22	9.774E-23
U-234	U-238	9.980E-01	0.000E+00	1.795E-06	8.806E-06	1.720E-05	7.120E-05	1.125E-04	8.505E-05	1.604E-05
U-234	U-238	1.317E-06	0.000E+00	2.369E-12	1.162E-11	2.271E-11	9.399E-11	1.484E-10	1.123E-10	2.118E-11
U-234	U-238	1.896E-08	0.000E+00	3.410E-14	1.673E-13	3.268E-13	1.353E-12	2.137E-12	1.616E-12	3.048E-13
U-234	U-238	2.096E-04	0.000E+00	3.770E-10	1.850E-09	3.613E-09	1.496E-08	2.362E-08	1.786E-08	3.370E-09
U-234	U-238	2.767E-10	0.000E+00	4.976E-16	2.442E-15	4.769E-15	1.974E-14	3.118E-14	2.358E-14	4.448E-15
U-234	U-238	3.983E-12	0.000E+00	7.163E-18	3.514E-17	6.865E-17	2.842E-16	4.488E-16	3.394E-16	6.402E-17
U-234	U-238	1.994E-04	0.000E+00	3.587E-10	1.760E-09	3.438E-09	1.423E-08	2.247E-08	1.700E-08	3.206E-09
U-234	U-238	2.633E-10	0.000E+00	4.735E-16	2.323E-15	4.538E-15	1.878E-14	2.967E-14	2.243E-14	4.232E-15
U-234	U-238	3.789E-12	0.000E+00	6.815E-18	3.344E-17	6.531E-17	2.704E-16	4.270E-16	3.229E-16	6.091E-17
U-234	U-238	4.189E-08	0.000E+00	7.534E-14	3.696E-13	7.220E-13	2.989E-12	4.721E-12	3.570E-12	6.734E-13
U-234	U-238	5.530E-14	0.000E+00	9.945E-20	4.879E-19	9.531E-19	3.945E-18	6.231E-18	4.712E-18	8.889E-19
U-234	U-238	7.959E-16	0.000E+00	1.431E-21	7.023E-21	1.372E-20	5.679E-20	8.969E-20	6.783E-20	1.279E-20
U-234	U-238	1.997E-07	0.000E+00	3.591E-13	1.762E-12	3.442E-12	1.425E-11	2.250E-11	1.702E-11	3.210E-12
U-234	U-238	2.636E-13	0.000E+00	4.740E-19	2.326E-18	4.543E-18	1.881E-17	2.970E-17	2.246E-17	4.237E-18
U-234	U-238	3.794E-15	0.000E+00	6.823E-21	3.348E-20	6.539E-20	2.707E-19	4.275E-19	3.233E-19	6.099E-20
U-234	∑S(j):		0.000E+00	1.798E-06	8.824E-06	1.724E-05	7.135E-05	1.127E-04	8.522E-05	1.608E-05
Th-230	U-238	1.599E-03	0.000E+00	1.325E-14	3.270E-13	1.288E-12	2.842E-11	9.756E-11	8.119E-10	1.124E-09
Th-230	U-238	3.039E-11	0.000E+00	2.517E-22	6.213E-21	2.446E-20	5.400E-19	1.854E-18	1.543E-17	2.135E-17
Th-230	U-238	3.359E-07	0.000E+00	2.782E-18	6.868E-17	2.704E-16	5.969E-15	2.049E-14	1.705E-13	2.360E-13
Th-230	U-238	4.434E-13	0.000E+00	3.672E-24	9.066E-23	3.570E-22	7.880E-21	2.705E-20	2.251E-19	3.116E-19
Th-230	U-238	6.383E-15	0.000E+00	5.286E-26	1.305E-24	5.139E-24	1.134E-22	3.894E-22	3.240E-21	4.485E-21
Th-230	U-238	3.196E-07	0.000E+00	2.647E-18	6.535E-17	2.573E-16	5.679E-15	1.950E-14	1.622E-13	2.246E-13
Th-230	U-238	4.219E-13	0.000E+00	3.494E-24	8.626E-23	3.396E-22	7.497E-21	2.574E-20	2.142E-19	2.964E-19
Th-230	U-238	6.073E-15	0.000E+00	5.029E-26	1.242E-24	4.889E-24	1.079E-22	3.705E-22	3.083E-21	4.267E-21
Th-230	U-238	6.713E-11	0.000E+00	5.560E-22	1.373E-20	5.405E-20	1.193E-18	4.095E-18	3.408E-17	4.717E-17
Th-230	U-238	8.862E-17	0.000E+00	7.339E-28	1.812E-26	7.134E-26	1.575E-24	5.406E-24	4.499E-23	6.226E-23
Th-230	U-238	1.276E-18	0.000E+00	1.056E-29	2.608E-28	1.027E-27	2.267E-26	7.781E-26	6.475E-25	8.962E-25
Th-230	U-238	3.200E-10	0.000E+00	2.650E-21	6.543E-20	2.576E-19	5.686E-18	1.952E-17	1.624E-16	2.248E-16

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	0.000E+00	3.498E-27	8.636E-26	3.401E-25	7.506E-24	2.577E-23	2.144E-22	2.968E-22
Th-230	U-238	6.080E-18	0.000E+00	5.035E-29	1.243E-27	4.895E-27	1.080E-25	3.709E-25	3.086E-24	4.272E-24
Th-230	U-238	9.980E-01	0.000E+00	8.265E-12	2.040E-10	8.034E-10	1.773E-08	6.088E-08	5.066E-07	7.012E-07
Th-230	U-238	1.317E-06	0.000E+00	1.091E-17	2.693E-16	1.061E-15	2.341E-14	8.036E-14	6.687E-13	9.256E-13
Th-230	U-238	1.896E-08	0.000E+00	1.570E-19	3.877E-18	1.527E-17	3.369E-16	1.157E-15	9.626E-15	1.332E-14
Th-230	U-238	2.096E-04	0.000E+00	1.736E-15	4.286E-14	1.688E-13	3.725E-12	1.279E-11	1.064E-10	1.473E-10
Th-230	U-238	2.767E-10	0.000E+00	2.292E-21	5.657E-20	2.228E-19	4.917E-18	1.688E-17	1.405E-16	1.944E-16
Th-230	U-238	3.983E-12	0.000E+00	3.298E-23	8.143E-22	3.206E-21	7.077E-20	2.430E-19	2.022E-18	2.798E-18
Th-230	U-238	1.994E-04	0.000E+00	1.652E-15	4.078E-14	1.606E-13	3.544E-12	1.217E-11	1.012E-10	1.401E-10
Th-230	U-238	2.633E-10	0.000E+00	2.180E-21	5.382E-20	2.119E-19	4.678E-18	1.606E-17	1.336E-16	1.850E-16
Th-230	U-238	3.789E-12	0.000E+00	3.138E-23	7.747E-22	3.051E-21	6.733E-20	2.312E-19	1.924E-18	2.662E-18
Th-230	U-238	4.189E-08	0.000E+00	3.469E-19	8.565E-18	3.372E-17	7.444E-16	2.555E-15	2.127E-14	2.943E-14
Th-230	U-238	5.530E-14	0.000E+00	4.579E-25	1.131E-23	4.452E-23	9.826E-22	3.373E-21	2.807E-20	3.885E-20
Th-230	U-238	7.959E-16	0.000E+00	6.592E-27	1.627E-25	6.408E-25	1.414E-23	4.855E-23	4.040E-22	5.592E-22
Th-230	U-238	1.997E-07	0.000E+00	1.654E-18	4.083E-17	1.608E-16	3.548E-15	1.218E-14	1.014E-13	1.403E-13
Th-230	U-238	2.636E-13	0.000E+00	2.183E-24	5.389E-23	2.122E-22	4.684E-21	1.608E-20	1.338E-19	1.852E-19
Th-230	U-238	3.794E-15	0.000E+00	3.142E-26	7.757E-25	3.054E-24	6.742E-23	2.314E-22	1.926E-21	2.666E-21
Th-230	∑S(j):		0.000E+00	8.282E-12	2.045E-10	8.051E-10	1.777E-08	6.100E-08	5.076E-07	7.026E-07
U-238	U-238	2.111E-09	1.351E-09	1.345E-09	1.320E-09	1.289E-09	1.067E-09	8.427E-10	1.275E-10	1.204E-11
U-238	U-238	3.039E-11	1.945E-11	1.936E-11	1.899E-11	1.855E-11	1.536E-11	1.213E-11	1.836E-12	1.733E-13
U-238	∑S(j):		1.371E-09	1.364E-09	1.339E-09	1.307E-09	1.082E-09	8.548E-10	1.294E-10	1.221E-11
U-234	U-238	2.111E-09	0.000E+00	3.797E-15	1.863E-14	3.639E-14	1.506E-13	2.379E-13	1.799E-13	3.394E-14
Th-230	U-238	2.111E-09	0.000E+00	1.748E-20	4.316E-19	1.700E-18	3.751E-17	1.288E-16	1.072E-15	1.483E-15
U-238	U-238	3.359E-07	2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
U-238	U-238	4.434E-13	2.838E-13	2.825E-13	2.772E-13	2.707E-13	2.241E-13	1.770E-13	2.679E-14	2.528E-15
U-238	∑S(j):		2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
Ra-226	U-238	3.359E-07	0.000E+00	4.020E-22	4.975E-20	3.930E-19	4.449E-17	3.150E-16	1.620E-14	5.206E-14
Ra-226	U-238	4.434E-13	0.000E+00	5.307E-28	6.567E-26	5.188E-25	5.872E-23	4.158E-22	2.138E-20	6.871E-20
Ra-226	U-238	6.383E-15	0.000E+00	7.638E-30	9.452E-28	7.468E-27	8.452E-25	5.986E-24	3.077E-22	9.891E-22
Ra-226	U-238	2.096E-04	0.000E+00	2.509E-19	3.104E-17	2.453E-16	2.776E-14	1.966E-13	1.011E-11	3.248E-11
Ra-226	U-238	2.767E-10	0.000E+00	3.311E-25	4.098E-23	3.237E-22	3.664E-20	2.595E-19	1.334E-17	4.288E-17
Ra-226	U-238	3.983E-12	0.000E+00	4.766E-27	5.898E-25	4.660E-24	5.274E-22	3.735E-21	1.920E-19	6.172E-19
Ra-226	∑S(j):		0.000E+00	2.513E-19	3.109E-17	2.457E-16	2.780E-14	1.969E-13	1.012E-11	3.253E-11
U-238	U-238	6.383E-15	4.085E-15	4.066E-15	3.990E-15	3.897E-15	3.226E-15	2.548E-15	3.856E-16	3.639E-17
U-238	U-238	3.196E-07	2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	∑S(j):		2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	U-238	4.219E-13	2.700E-13	2.687E-13	2.637E-13	2.576E-13	2.132E-13	1.684E-13	2.548E-14	2.405E-15
U-238	U-238	6.073E-15	3.886E-15	3.868E-15	3.796E-15	3.707E-15	3.069E-15	2.424E-15	3.668E-16	3.462E-17
U-238	∑S(j):		2.739E-13	2.726E-13	2.675E-13	2.613E-13	2.163E-13	1.708E-13	2.585E-14	2.440E-15
U-238	U-238	6.713E-11	4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13
U-238	U-238	8.862E-17	5.671E-17	5.645E-17	5.539E-17	5.410E-17	4.479E-17	3.537E-17	5.353E-18	5.052E-19
U-238	∑S(j):		4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13

Summary : Perim Soil Add.3-Industrial-Bkdg subtract
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Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	0.000E+00	8.034E-26	9.942E-24	7.855E-23	8.890E-21	6.296E-20	3.237E-18	1.040E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.060E-31	1.312E-29	1.037E-28	1.173E-26	8.310E-26	4.272E-24	1.373E-23
Ra-226	U-238	1.276E-18	0.000E+00	1.526E-33	1.889E-31	1.492E-30	1.689E-28	1.196E-27	6.150E-26	1.977E-25
Ra-226	U-238	4.189E-08	0.000E+00	5.013E-23	6.204E-21	4.901E-20	5.547E-18	3.928E-17	2.020E-15	6.491E-15
Ra-226	U-238	5.530E-14	0.000E+00	6.617E-29	8.189E-27	6.470E-26	7.322E-24	5.186E-23	2.666E-21	8.569E-21
Ra-226	U-238	7.959E-16	0.000E+00	9.525E-31	1.179E-28	9.312E-28	1.054E-25	7.464E-25	3.837E-23	1.233E-22
Ra-226	∑S(j):		0.000E+00	5.021E-23	6.214E-21	4.909E-20	5.556E-18	3.935E-17	2.023E-15	6.502E-15
U-238	U-238	1.276E-18	8.163E-19	8.125E-19	7.973E-19	7.787E-19	6.447E-19	5.092E-19	7.705E-20	7.272E-21
U-238	U-238	3.200E-10	2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	∑S(j):		2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	U-238	4.224E-16	2.703E-16	2.691E-16	2.640E-16	2.579E-16	2.135E-16	1.686E-16	2.552E-17	2.408E-18
U-238	U-238	6.080E-18	3.891E-18	3.873E-18	3.800E-18	3.712E-18	3.073E-18	2.427E-18	3.673E-19	3.467E-20
U-238	∑S(j):		2.742E-16	2.729E-16	2.678E-16	2.616E-16	2.166E-16	1.710E-16	2.588E-17	2.443E-18
U-238	U-238	9.980E-01	6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.317E-06	8.431E-07	8.391E-07	8.234E-07	8.042E-07	6.658E-07	5.258E-07	7.958E-08	7.511E-09
U-238	∑S(j):		6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.896E-08	1.214E-08	1.208E-08	1.185E-08	1.158E-08	9.584E-09	7.569E-09	1.145E-09	1.081E-10
U-238	U-238	2.096E-04	1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	∑S(j):		1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	U-238	2.767E-10	1.771E-10	1.763E-10	1.730E-10	1.689E-10	1.399E-10	1.105E-10	1.671E-11	1.578E-12
U-238	U-238	3.983E-12	2.549E-12	2.537E-12	2.490E-12	2.431E-12	2.013E-12	1.590E-12	2.406E-13	2.271E-14
U-238	∑S(j):		1.796E-10	1.788E-10	1.754E-10	1.714E-10	1.419E-10	1.120E-10	1.696E-11	1.600E-12
U-238	U-238	1.994E-04	1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	2.633E-10	1.685E-10	1.677E-10	1.646E-10	1.607E-10	1.331E-10	1.051E-10	1.590E-11	1.501E-12
U-238	∑S(j):		1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	3.789E-12	2.425E-12	2.414E-12	2.369E-12	2.313E-12	1.915E-12	1.513E-12	2.289E-13	2.161E-14
U-238	U-238	4.189E-08	2.681E-08	2.668E-08	2.618E-08	2.557E-08	2.117E-08	1.672E-08	2.530E-09	2.388E-10
U-238	∑S(j):		2.681E-08	2.669E-08	2.619E-08	2.558E-08	2.118E-08	1.672E-08	2.531E-09	2.389E-10
U-238	U-238	5.530E-14	3.539E-14	3.522E-14	3.456E-14	3.376E-14	2.795E-14	2.207E-14	3.340E-15	3.153E-16
U-238	U-238	7.959E-16	5.094E-16	5.070E-16	4.975E-16	4.859E-16	4.023E-16	3.177E-16	4.808E-17	4.538E-18
U-238	∑S(j):		3.590E-14	3.573E-14	3.506E-14	3.424E-14	2.835E-14	2.239E-14	3.388E-15	3.198E-16
U-238	U-238	1.997E-07	1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	2.636E-13	1.687E-13	1.679E-13	1.648E-13	1.609E-13	1.332E-13	1.052E-13	1.592E-14	1.503E-15
U-238	∑S(j):		1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	3.794E-15	2.428E-15	2.417E-15	2.371E-15	2.316E-15	1.918E-15	1.514E-15	2.292E-16	2.163E-17

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

RESCALC.EXE execution time = 1009.28 seconds
Total water/soil iteration failures = 9.000E+01.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Dose Conversion Factor (and Related) Parameter Summary
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1(1)
A-1	Ba-137m (Source: DCFPAK3.02)	3.381E+00	3.381E+00	DCF1(2)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1(3)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1(4)
A-1	Cs-137 (Source: DCFPAK3.02)	8.686E-04	8.687E-04	DCF1(5)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1(6)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1(7)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1(8)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1(9)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1(10)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1(11)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1(12)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1(13)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1(14)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1(15)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1(16)
A-1	Sr-90 (Source: DCFPAK3.02)	6.463E-04	6.464E-04	DCF1(17)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1(18)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1(19)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1(20)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1(21)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1(22)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1(23)
A-1	Y-90 (Source: DCFPAK3.02)	4.016E-02	4.017E-02	DCF1(24)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Cs-137+D	1.460E-04	1.457E-04	DCF2(1)
B-1	Pb-210+D	3.709E-02	2.077E-02	DCF2(2)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2(3)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2(4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2(5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2(8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2(11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2(14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2(17)
B-1	Sr-90+D	5.845E-04	5.786E-04	DCF2(20)
B-1	Th-230	3.760E-01	3.759E-01	DCF2(21)
B-1	U-234	3.480E-02	3.479E-02	DCF2(36)
B-1	U-238	2.970E-02	2.973E-02	DCF2(51)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2(52)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2(67)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Cs-137+D	5.030E-05	5.032E-05	DCF3(1)
D-1	Pb-210+D	7.065E-03	2.575E-03	DCF3(2)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3(3)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3(4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3(8)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3(11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3(14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3(17)
D-1	Sr-90+D	1.119E-04	1.021E-04	DCF3(20)
D-1	Th-230	7.920E-04	7.918E-04	DCF3(21)
D-1	U-234	1.830E-04	1.831E-04	DCF3(36)
D-1	U-238	1.650E-04	1.650E-04	DCF3(51)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(52)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(67)
D-34	Food transfer factors:			
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(1,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(1,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , 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(20,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(20,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(20,3)

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(21,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(21,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(36,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(36,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(36,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(52,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(52,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(52,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(67,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(67,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(67,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(1,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				

Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(20,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(20,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(21,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(21,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(36,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(36,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(52,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(52,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(67,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(67,2)
D-5				

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

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.400E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	5.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	2.500E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	5.000E+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): Cs-137	1.330E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Ra-226	6.500E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Sr-90	3.300E-01	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-238	6.400E-01	0.000E+00	---	S1(51)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(51)
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)	1.660E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.300E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.400E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	6.230E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.600E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.230E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.600E-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	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.660E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.000E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.800E-03	2.000E-02	---	HGWT

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.900E+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)	1.800E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	0.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.660E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.300E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.400E-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	4.900E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.889E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.618E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.574E-02	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(51)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(51,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(51)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(51)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(51)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.082E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.349E-06	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(36)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(36,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(36)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(36)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(36)
R017	Inhalation rate (m**3/yr)	7.300E+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	8.000E-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)

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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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)	not used	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	not used	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	not used	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	not used	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	4.380E+01	3.650E+01	---	SOIL
R018	Drinking water intake (L/yr)	7.000E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	1.000E-05	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	not used	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	7.000E-01	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	not used	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	1.700E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	2.500E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	not used	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	not used	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	not used	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	2.000E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	65	---	---	KYMAX

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Summary of Pathway Selections

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

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	14000.00 square meters	Cs-137	1.330E+00
Thickness:	5.00 meters	Ra-226	6.500E-01
Cover Depth:	0.00 meters	Sr-90	3.300E-01
		U-238	6.400E-01

Total Dose TDOSE(t), mrem/yr
Basic Radiation Dose Limit = 1.500E+01 mrem/yr
Total Mixture Sum M(t) = Fraction of Basic Dose Limit Received at Time (t)

t (years):	0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	1.050E+01	1.060E+01	1.094E+01	1.123E+01	1.117E+01	1.081E+01	8.288E+00	6.202E+00
M(t):	7.000E-01	7.068E-01	7.293E-01	7.488E-01	7.447E-01	7.209E-01	5.525E-01	4.134E-01

Maximum TDOSE(t): 1.123E+01 mrem/yr at t = 9.93 ± 0.02 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 = 9.934E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	2.034E+00	0.1811	3.337E-06	0.0000	0.000E+00	0.0000	1.826E-01	0.0163	0.000E+00	0.0000	0.000E+00	0.0000	1.724E-03	0.0002
Ra-226	4.141E+00	0.3686	6.455E-04	0.0001	0.000E+00	0.0000	3.456E+00	0.3077	0.000E+00	0.0000	0.000E+00	0.0000	6.372E-02	0.0057
Sr-90	4.907E-03	0.0004	2.513E-06	0.0000	0.000E+00	0.0000	5.738E-01	0.0511	0.000E+00	0.0000	0.000E+00	0.0000	7.216E-04	0.0001
U-238	6.080E-02	0.0054	3.968E-04	0.0000	0.000E+00	0.0000	2.353E-02	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	3.553E-03	0.0003
Total	6.241E+00	0.5556	1.048E-03	0.0001	0.000E+00	0.0000	4.236E+00	0.3771	0.000E+00	0.0000	0.000E+00	0.0000	6.972E-02	0.0062

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 9.934E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	7.504E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.491E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.219E+00	0.1975
Ra-226	1.145E-02	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	8.302E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.673E+00	0.6831
Sr-90	5.417E-01	0.0482	0.000E+00	0.0000	0.000E+00	0.0000	4.252E-02	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	1.164E+00	0.1036
U-238	8.222E-02	0.0073	0.000E+00	0.0000	0.000E+00	0.0000	5.975E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.765E-01	0.0157
Total	6.354E-01	0.0566	0.000E+00	0.0000	0.000E+00	0.0000	4.933E-02	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	1.123E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

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.
Cs-137	2.563E+00	0.2441	4.205E-06	0.0000	0.000E+00	0.0000	2.301E-01	0.0219	0.000E+00	0.0000	0.000E+00	0.0000	2.172E-03	0.0002
Ra-226	4.165E+00	0.3966	5.109E-04	0.0000	0.000E+00	0.0000	2.427E+00	0.2311	0.000E+00	0.0000	0.000E+00	0.0000	2.455E-02	0.0023
Sr-90	8.049E-03	0.0008	4.123E-06	0.0000	0.000E+00	0.0000	9.411E-01	0.0896	0.000E+00	0.0000	0.000E+00	0.0000	1.184E-03	0.0001
U-238	6.372E-02	0.0061	4.158E-04	0.0000	0.000E+00	0.0000	2.465E-02	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	3.723E-03	0.0004
Total	6.800E+00	0.6476	9.350E-04	0.0001	0.000E+00	0.0000	3.623E+00	0.3450	0.000E+00	0.0000	0.000E+00	0.0000	3.163E-02	0.0030

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.
Cs-137	4.466E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.967E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.796E+00	0.2662
Ra-226	4.505E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.905E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.617E+00	0.6301
Sr-90	3.836E-02	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	2.865E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	9.915E-01	0.0944
U-238	4.014E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	2.781E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.680E-02	0.0092
Total	4.243E-02	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	3.146E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.050E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Total Dose 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.
Cs-137	2.505E+00	0.2362	4.108E-06	0.0000	0.000E+00	0.0000	2.248E-01	0.0212	0.000E+00	0.0000	0.000E+00	0.0000	2.122E-03	0.0002
Ra-226	4.162E+00	0.3926	5.265E-04	0.0000	0.000E+00	0.0000	2.548E+00	0.2404	0.000E+00	0.0000	0.000E+00	0.0000	2.910E-02	0.0027
Sr-90	7.658E-03	0.0007	3.922E-06	0.0000	0.000E+00	0.0000	8.955E-01	0.0845	0.000E+00	0.0000	0.000E+00	0.0000	1.126E-03	0.0001
U-238	6.342E-02	0.0060	4.139E-04	0.0000	0.000E+00	0.0000	2.454E-02	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	3.705E-03	0.0003
Total	6.738E+00	0.6356	9.484E-04	0.0001	0.000E+00	0.0000	3.693E+00	0.3484	0.000E+00	0.0000	0.000E+00	0.0000	3.605E-02	0.0034

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+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.
Cs-137	1.320E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.349E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.731E+00	0.2577
Ra-226	3.006E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.091E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.740E+00	0.6358
Sr-90	1.117E-01	0.0105	0.000E+00	0.0000	0.000E+00	0.0000	8.604E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	1.025E+00	0.0966
U-238	1.205E-02	0.0011	0.000E+00	0.0000	0.000E+00	0.0000	8.614E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	1.050E-01	0.0099
Total	1.241E-01	0.0117	0.000E+00	0.0000	0.000E+00	0.0000	9.488E-03	0.0009	0.000E+00	0.0000	0.000E+00	0.0000	1.060E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+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.
Cs-137	2.282E+00	0.2086	3.743E-06	0.0000	0.000E+00	0.0000	2.049E-01	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	1.934E-03	0.0002
Ra-226	4.153E+00	0.3796	5.842E-04	0.0001	0.000E+00	0.0000	2.988E+00	0.2731	0.000E+00	0.0000	0.000E+00	0.0000	4.586E-02	0.0042
Sr-90	6.274E-03	0.0006	3.214E-06	0.0000	0.000E+00	0.0000	7.337E-01	0.0671	0.000E+00	0.0000	0.000E+00	0.0000	9.226E-04	0.0001
U-238	6.223E-02	0.0057	4.062E-04	0.0000	0.000E+00	0.0000	2.408E-02	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	3.636E-03	0.0003
Total	6.503E+00	0.5944	9.973E-04	0.0001	0.000E+00	0.0000	3.951E+00	0.3611	0.000E+00	0.0000	0.000E+00	0.0000	5.235E-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 = 5.000E+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.
Cs-137	4.430E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.226E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.489E+00	0.2275
Ra-226	3.539E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	2.551E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.191E+00	0.6573
Sr-90	3.545E-01	0.0324	0.000E+00	0.0000	0.000E+00	0.0000	2.770E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	1.123E+00	0.1027
U-238	4.384E-02	0.0040	0.000E+00	0.0000	0.000E+00	0.0000	3.178E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	1.374E-01	0.0126
Total	4.020E-01	0.0367	0.000E+00	0.0000	0.000E+00	0.0000	3.113E-02	0.0028	0.000E+00	0.0000	0.000E+00	0.0000	1.094E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Total Dose 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.
Cs-137	2.031E+00	0.1809	3.332E-06	0.0000	0.000E+00	0.0000	1.824E-01	0.0162	0.000E+00	0.0000	0.000E+00	0.0000	1.721E-03	0.0002
Ra-226	4.141E+00	0.3686	6.463E-04	0.0001	0.000E+00	0.0000	3.462E+00	0.3082	0.000E+00	0.0000	0.000E+00	0.0000	6.394E-02	0.0057
Sr-90	4.891E-03	0.0004	2.505E-06	0.0000	0.000E+00	0.0000	5.719E-01	0.0509	0.000E+00	0.0000	0.000E+00	0.0000	7.192E-04	0.0001
U-238	6.078E-02	0.0054	3.967E-04	0.0000	0.000E+00	0.0000	2.352E-02	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	3.551E-03	0.0003
Total	6.238E+00	0.5553	1.049E-03	0.0001	0.000E+00	0.0000	4.239E+00	0.3774	0.000E+00	0.0000	0.000E+00	0.0000	6.993E-02	0.0062

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 1.000E+01 years

Water Dependent Pathways

Radio-	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.
Cs-137	7.540E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.517E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.216E+00	0.1972
Ra-226	1.158E-02	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	8.397E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	7.679E+00	0.6837
Sr-90	5.405E-01	0.0481	0.000E+00	0.0000	0.000E+00	0.0000	4.244E-02	0.0038	0.000E+00	0.0000	0.000E+00	0.0000	1.160E+00	0.1033
U-238	8.273E-02	0.0074	0.000E+00	0.0000	0.000E+00	0.0000	6.012E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.770E-01	0.0158
Total	6.349E-01	0.0565	0.000E+00	0.0000	0.000E+00	0.0000	4.930E-02	0.0044	0.000E+00	0.0000	0.000E+00	0.0000	1.123E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	8.010E-01	0.0717	1.314E-06	0.0000	0.000E+00	0.0000	7.190E-02	0.0064	0.000E+00	0.0000	0.000E+00	0.0000	6.787E-04	0.0001
Ra-226	4.045E+00	0.3621	8.930E-04	0.0001	0.000E+00	0.0000	5.361E+00	0.4799	0.000E+00	0.0000	0.000E+00	0.0000	1.372E-01	0.0123
Sr-90	6.669E-04	0.0001	3.416E-07	0.0000	0.000E+00	0.0000	7.798E-02	0.0070	0.000E+00	0.0000	0.000E+00	0.0000	9.806E-05	0.0000
U-238	5.032E-02	0.0045	3.285E-04	0.0000	0.000E+00	0.0000	1.947E-02	0.0017	0.000E+00	0.0000	0.000E+00	0.0000	2.941E-03	0.0003
Total	4.897E+00	0.4383	1.223E-03	0.0001	0.000E+00	0.0000	5.531E+00	0.4951	0.000E+00	0.0000	0.000E+00	0.0000	1.410E-01	0.0126

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

Water Dependent Pathways

Radio-	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.
Cs-137	1.440E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.058E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.737E-01	0.0782
Ra-226	1.239E-01	0.0111	0.000E+00	0.0000	0.000E+00	0.0000	9.029E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	9.677E+00	0.8663
Sr-90	7.359E-02	0.0066	0.000E+00	0.0000	0.000E+00	0.0000	5.781E-03	0.0005	0.000E+00	0.0000	0.000E+00	0.0000	1.581E-01	0.0142
U-238	3.627E-01	0.0325	0.000E+00	0.0000	0.000E+00	0.0000	2.641E-02	0.0024	0.000E+00	0.0000	0.000E+00	0.0000	4.621E-01	0.0414
Total	5.603E-01	0.0502	0.000E+00	0.0000	0.000E+00	0.0000	4.123E-02	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	1.117E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Total Dose 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.
Cs-137	2.503E-01	0.0231	4.105E-07	0.0000	0.000E+00	0.0000	2.247E-02	0.0021	0.000E+00	0.0000	0.000E+00	0.0000	2.121E-04	0.0000
Ra-226	3.927E+00	0.3631	9.468E-04	0.0001	0.000E+00	0.0000	5.810E+00	0.5373	0.000E+00	0.0000	0.000E+00	0.0000	1.561E-01	0.0144
Sr-90	5.525E-05	0.0000	2.830E-08	0.0000	0.000E+00	0.0000	6.461E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	8.124E-06	0.0000
U-238	3.974E-02	0.0037	2.595E-04	0.0000	0.000E+00	0.0000	1.538E-02	0.0014	0.000E+00	0.0000	0.000E+00	0.0000	2.323E-03	0.0002
Total	4.217E+00	0.3900	1.207E-03	0.0001	0.000E+00	0.0000	5.854E+00	0.5414	0.000E+00	0.0000	0.000E+00	0.0000	1.586E-01	0.0147

Total Dose 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.
Cs-137	9.032E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.641E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.730E-01	0.0253
Ra-226	2.171E-01	0.0201	0.000E+00	0.0000	0.000E+00	0.0000	1.583E-02	0.0015	0.000E+00	0.0000	0.000E+00	0.0000	1.013E+01	0.9365
Sr-90	6.079E-03	0.0006	0.000E+00	0.0000	0.000E+00	0.0000	4.776E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.308E-02	0.0012
U-238	3.199E-01	0.0296	0.000E+00	0.0000	0.000E+00	0.0000	2.331E-02	0.0022	0.000E+00	0.0000	0.000E+00	0.0000	4.009E-01	0.0371
Total	5.432E-01	0.0502	0.000E+00	0.0000	0.000E+00	0.0000	3.962E-02	0.0037	0.000E+00	0.0000	0.000E+00	0.0000	1.081E+01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+02 years

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	2.274E-05	0.0000	3.730E-11	0.0000	0.000E+00	0.0000	2.041E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.927E-08	0.0000
Ra-226	3.095E+00	0.3734	7.628E-04	0.0001	0.000E+00	0.0000	4.704E+00	0.5676	0.000E+00	0.0000	0.000E+00	0.0000	1.277E-01	0.0154
Sr-90	1.227E-13	0.0000	6.284E-17	0.0000	0.000E+00	0.0000	1.435E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.804E-14	0.0000
U-238	6.014E-03	0.0007	3.932E-05	0.0000	0.000E+00	0.0000	2.331E-03	0.0003	0.000E+00	0.0000	0.000E+00	0.0000	3.519E-04	0.0000
Total	3.101E+00	0.3742	8.021E-04	0.0001	0.000E+00	0.0000	4.706E+00	0.5679	0.000E+00	0.0000	0.000E+00	0.0000	1.281E-01	0.0155

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

Water Dependent Pathways

Radio-	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.
Cs-137	4.371E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.215E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.484E-05	0.0000
Ra-226	2.805E-01	0.0338	0.000E+00	0.0000	0.000E+00	0.0000	2.046E-02	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	8.229E+00	0.9928
Sr-90	1.314E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.032E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.866E-11	0.0000
U-238	4.732E-02	0.0057	0.000E+00	0.0000	0.000E+00	0.0000	3.448E-03	0.0004	0.000E+00	0.0000	0.000E+00	0.0000	5.951E-02	0.0072
Total	3.278E-01	0.0395	0.000E+00	0.0000	0.000E+00	0.0000	2.390E-02	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	8.288E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Total Dose 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.
Cs-137	2.017E-10	0.0000	3.308E-16	0.0000	0.000E+00	0.0000	1.810E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.709E-13	0.0000
Ra-226	2.299E+00	0.3706	5.665E-04	0.0001	0.000E+00	0.0000	3.494E+00	0.5633	0.000E+00	0.0000	0.000E+00	0.0000	9.487E-02	0.0153
Sr-90	1.870E-24	0.0000	9.578E-28	0.0000	0.000E+00	0.0000	2.187E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.750E-25	0.0000
U-238	5.686E-04	0.0001	3.723E-06	0.0000	0.000E+00	0.0000	2.218E-04	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.332E-05	0.0000
Total	2.299E+00	0.3707	5.702E-04	0.0001	0.000E+00	0.0000	3.494E+00	0.5634	0.000E+00	0.0000	0.000E+00	0.0000	9.490E-02	0.0153

Total Dose 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.
Cs-137	8.431E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.203E-14	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.208E-10	0.0000
Ra-226	2.877E-01	0.0464	0.000E+00	0.0000	0.000E+00	0.0000	2.098E-02	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	6.196E+00	0.9991
Sr-90	1.915E-22	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.505E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.274E-22	0.0000
U-238	4.298E-03	0.0007	0.000E+00	0.0000	0.000E+00	0.0000	3.132E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	5.438E-03	0.0009
Total	2.919E-01	0.0471	0.000E+00	0.0000	0.000E+00	0.0000	2.130E-02	0.0034	0.000E+00	0.0000	0.000E+00	0.0000	6.202E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	2.102E+00	2.054E+00	1.871E+00	1.666E+00	6.569E-01	2.053E-01	1.868E-05	1.660E-10
Ra-226+D	Ra-226+D	9.996E-01	1.006E+01	1.005E+01	1.003E+01	9.998E+00	9.763E+00	9.477E+00	7.473E+00	5.553E+00
Ra-226+D	Pb-210+D	9.996E-01	1.160E-01	3.123E-01	1.029E+00	1.810E+00	5.117E+00	6.094E+00	5.180E+00	3.974E+00
Ra-226+D	∑DSR(j)		1.017E+01	1.036E+01	1.106E+01	1.181E+01	1.488E+01	1.557E+01	1.265E+01	9.528E+00
Ra-226+D	Ra-226+D	1.319E-06	1.328E-05	1.327E-05	1.324E-05	1.320E-05	1.289E-05	1.251E-05	9.864E-06	7.330E-06
Ra-226+D	Pb-210+D1	1.319E-06	5.626E-08	1.515E-07	4.992E-07	8.781E-07	2.482E-06	2.956E-06	2.512E-06	1.927E-06
Ra-226+D	∑DSR(j)		1.333E-05	1.342E-05	1.374E-05	1.407E-05	1.537E-05	1.547E-05	1.238E-05	9.258E-06
Ra-226+D	Ra-226+D	1.899E-08	1.911E-07	1.910E-07	1.905E-07	1.900E-07	1.855E-07	1.801E-07	1.420E-07	1.055E-07
Ra-226+D	Pb-210+D2	1.899E-08	9.187E-10	2.503E-09	8.295E-09	1.460E-08	4.114E-08	4.887E-08	4.136E-08	3.161E-08
Ra-226+D	∑DSR(j)		1.920E-07	1.935E-07	1.988E-07	2.046E-07	2.266E-07	2.289E-07	1.833E-07	1.371E-07
Ra-226+D1	Ra-226+D1	2.100E-04	4.269E-03	4.266E-03	4.256E-03	4.243E-03	4.144E-03	4.022E-03	3.171E-03	2.356E-03
Ra-226+D1	Pb-210+D	2.100E-04	2.437E-05	6.559E-05	2.161E-04	3.802E-04	1.075E-03	1.280E-03	1.088E-03	8.348E-04
Ra-226+D1	∑DSR(j)		4.293E-03	4.332E-03	4.472E-03	4.624E-03	5.218E-03	5.302E-03	4.259E-03	3.190E-03
Ra-226+D1	Ra-226+D1	2.771E-10	5.635E-09	5.631E-09	5.618E-09	5.601E-09	5.470E-09	5.309E-09	4.186E-09	3.110E-09
Ra-226+D1	Pb-210+D1	2.771E-10	1.182E-11	3.182E-11	1.049E-10	1.844E-10	5.214E-10	6.209E-10	5.277E-10	4.048E-10
Ra-226+D1	∑DSR(j)		5.647E-09	5.663E-09	5.723E-09	5.786E-09	5.991E-09	5.930E-09	4.713E-09	3.514E-09
Ra-226+D1	Ra-226+D1	3.989E-12	8.111E-11	8.106E-11	8.087E-11	8.062E-11	7.873E-11	7.642E-11	6.025E-11	4.476E-11
Ra-226+D1	Pb-210+D2	3.989E-12	1.930E-13	5.257E-13	1.742E-12	3.066E-12	8.642E-12	1.026E-11	8.688E-12	6.638E-12
Ra-226+D1	∑DSR(j)		8.130E-11	8.158E-11	8.261E-11	8.369E-11	8.737E-11	8.669E-11	6.894E-11	5.140E-11
Ra-226+D2	Ra-226+D2	1.998E-04	1.854E-03	1.853E-03	1.848E-03	1.843E-03	1.800E-03	1.747E-03	1.378E-03	1.024E-03
Ra-226+D2	Pb-210+D	1.998E-04	2.319E-05	6.241E-05	2.056E-04	3.617E-04	1.023E-03	1.218E-03	1.035E-03	7.943E-04
Ra-226+D2	∑DSR(j)		1.877E-03	1.915E-03	2.054E-03	2.205E-03	2.822E-03	2.965E-03	2.413E-03	1.818E-03
Ra-226+D2	Ra-226+D2	2.637E-10	2.447E-09	2.446E-09	2.440E-09	2.433E-09	2.376E-09	2.306E-09	1.818E-09	1.351E-09
Ra-226+D2	Pb-210+D1	2.637E-10	1.124E-11	3.027E-11	9.977E-11	1.755E-10	4.961E-10	5.907E-10	5.021E-10	3.852E-10
Ra-226+D2	∑DSR(j)		2.458E-09	2.476E-09	2.540E-09	2.608E-09	2.872E-09	2.897E-09	2.320E-09	1.737E-09
Ra-226+D2	Ra-226+D2	3.795E-12	3.522E-11	3.520E-11	3.512E-11	3.502E-11	3.419E-11	3.319E-11	2.617E-11	1.945E-11
Ra-226+D2	Pb-210+D2	3.795E-12	1.836E-13	5.001E-13	1.658E-12	2.917E-12	8.222E-12	9.766E-12	8.266E-12	6.316E-12
Ra-226+D2	∑DSR(j)		3.541E-11	3.570E-11	3.678E-11	3.793E-11	4.242E-11	4.296E-11	3.444E-11	2.577E-11
Ra-226+D3	Ra-226+D3	4.196E-08	8.203E-07	8.198E-07	8.179E-07	8.155E-07	7.963E-07	7.730E-07	6.094E-07	4.527E-07
Ra-226+D3	Pb-210+D	4.196E-08	4.871E-09	1.311E-08	4.319E-08	7.597E-08	2.148E-07	2.558E-07	2.174E-07	1.668E-07
Ra-226+D3	∑DSR(j)		8.252E-07	8.329E-07	8.611E-07	8.914E-07	1.011E-06	1.029E-06	8.268E-07	6.195E-07
Ra-226+D3	Ra-226+D3	5.538E-14	1.083E-12	1.082E-12	1.080E-12	1.076E-12	1.051E-12	1.020E-12	8.044E-13	5.976E-13
Ra-226+D3	Pb-210+D1	5.538E-14	2.362E-15	6.358E-15	2.096E-14	3.686E-14	1.042E-13	1.241E-13	1.055E-13	8.090E-14
Ra-226+D3	∑DSR(j)		1.085E-12	1.089E-12	1.101E-12	1.113E-12	1.155E-12	1.144E-12	9.098E-13	6.785E-13

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226+D3	Ra-226+D3	7.972E-16	1.559E-14	1.558E-14	1.554E-14	1.549E-14	1.513E-14	1.469E-14	1.158E-14	8.601E-15
Ra-226+D3	Pb-210+D2	7.972E-16	3.856E-17	1.051E-16	3.482E-16	6.128E-16	1.727E-15	2.051E-15	1.736E-15	1.327E-15
Ra-226+D3	∑DSR(j)		1.562E-14	1.568E-14	1.589E-14	1.611E-14	1.686E-14	1.674E-14	1.331E-14	9.928E-15
Ra-226+D4	Ra-226+D4	2.000E-07	7.354E-07	7.350E-07	7.332E-07	7.311E-07	7.139E-07	6.931E-07	5.469E-07	4.068E-07
Ra-226+D4	Pb-210+D	2.000E-07	2.322E-08	6.248E-08	2.059E-07	3.621E-07	1.024E-06	1.219E-06	1.036E-06	7.952E-07
Ra-226+D4	∑DSR(j)		7.586E-07	7.975E-07	9.391E-07	1.093E-06	1.738E-06	1.912E-06	1.583E-06	1.202E-06
Ra-226+D4	Ra-226+D4	2.640E-13	9.707E-13	9.702E-13	9.679E-13	9.650E-13	9.424E-13	9.149E-13	7.220E-13	5.370E-13
Ra-226+D4	Pb-210+D1	2.640E-13	1.126E-14	3.031E-14	9.989E-14	1.757E-13	4.967E-13	5.914E-13	5.027E-13	3.856E-13
Ra-226+D4	∑DSR(j)		9.820E-13	1.000E-12	1.068E-12	1.141E-12	1.439E-12	1.506E-12	1.225E-12	9.227E-13
Ra-226+D4	Ra-226+D4	3.800E-15	1.397E-14	1.396E-14	1.393E-14	1.389E-14	1.356E-14	1.317E-14	1.039E-14	7.730E-15
Ra-226+D4	Pb-210+D2	3.800E-15	1.838E-16	5.007E-16	1.660E-15	2.921E-15	8.232E-15	9.778E-15	8.276E-15	6.324E-15
Ra-226+D4	∑DSR(j)		1.416E-14	1.447E-14	1.559E-14	1.681E-14	2.180E-14	2.295E-14	1.867E-14	1.405E-14
Sr-90+D	Sr-90+D	1.000E+00	3.005E+00	3.105E+00	3.403E+00	3.517E+00	4.791E-01	3.964E-02	8.685E-11	1.295E-21
U-238	U-238	5.450E-07	2.627E-08	3.299E-08	5.956E-08	9.207E-08	3.260E-07	2.858E-07	4.229E-08	3.842E-09
U-238+D	U-238+D	1.599E-03	8.304E-03	8.287E-03	8.218E-03	8.134E-03	7.530E-03	6.037E-03	9.105E-04	8.547E-05
U-238+D	U-234	1.599E-03	1.262E-10	4.608E-10	3.019E-09	8.894E-09	1.513E-07	2.640E-07	1.944E-07	3.528E-08
U-238+D	Th-230	1.599E-03	9.715E-16	5.788E-15	6.759E-14	2.369E-13	4.766E-12	1.619E-11	1.333E-10	1.845E-10
U-238+D	Ra-226+D	1.599E-03	2.882E-14	8.527E-14	3.467E-13	6.477E-13	5.867E-12	2.863E-11	1.247E-09	3.983E-09
U-238+D	Pb-210+D	1.599E-03	9.759E-13	2.884E-12	1.158E-11	2.079E-11	8.291E-11	1.620E-10	1.650E-09	4.986E-09
U-238+D	∑DSR(j)		8.304E-03	8.287E-03	8.218E-03	8.134E-03	7.530E-03	6.038E-03	9.107E-04	8.551E-05
U-238+D	U-238+D	2.111E-09	1.096E-08	1.094E-08	1.085E-08	1.074E-08	9.940E-09	7.969E-09	1.202E-09	1.128E-10
U-238+D	U-234	2.111E-09	1.666E-16	6.083E-16	3.985E-15	1.174E-14	1.997E-13	3.485E-13	2.566E-13	4.657E-14
U-238+D	Th-230	2.111E-09	1.282E-21	7.640E-21	8.922E-20	3.127E-19	6.292E-18	2.137E-17	1.760E-16	2.435E-16
U-238+D	Ra-226+D	2.111E-09	3.804E-20	1.126E-19	4.577E-19	8.549E-19	7.744E-18	3.779E-17	1.646E-15	5.258E-15
U-238+D	Pb-210+D1	2.111E-09	4.713E-19	1.393E-18	5.590E-18	1.004E-17	4.004E-17	7.820E-17	7.970E-16	2.408E-15
U-238+D	∑DSR(j)		1.096E-08	1.094E-08	1.085E-08	1.074E-08	9.940E-09	7.970E-09	1.202E-09	1.129E-10
U-238+D	U-238+D	3.039E-11	1.578E-10	1.574E-10	1.561E-10	1.546E-10	1.431E-10	1.147E-10	1.730E-11	1.624E-12
U-238+D	U-234	3.039E-11	2.398E-18	8.756E-18	5.735E-17	1.690E-16	2.875E-15	5.016E-15	3.693E-15	6.703E-16
U-238+D	Th-230	3.039E-11	1.846E-23	1.100E-22	1.284E-21	4.501E-21	9.056E-20	3.076E-19	2.534E-18	3.505E-18
U-238+D	Ra-226+D	3.039E-11	5.476E-22	1.620E-21	6.588E-21	1.231E-20	1.115E-19	5.440E-19	2.369E-17	7.568E-17
U-238+D	Pb-210+D2	3.039E-11	6.771E-21	2.001E-20	8.031E-20	1.442E-19	5.760E-19	1.132E-18	1.219E-17	3.718E-17
U-238+D	∑DSR(j)		1.578E-10	1.574E-10	1.561E-10	1.546E-10	1.431E-10	1.147E-10	1.730E-11	1.625E-12
U-238+D	U-238+D	3.359E-07	1.744E-06	1.741E-06	1.726E-06	1.709E-06	1.582E-06	1.268E-06	1.913E-07	1.795E-08
U-238+D	U-234	3.359E-07	2.651E-14	9.680E-14	6.340E-13	1.868E-12	3.178E-11	5.545E-11	4.083E-11	7.411E-12
U-238+D	Th-230	3.359E-07	2.041E-19	1.216E-18	1.420E-17	4.976E-17	1.001E-15	3.400E-15	2.801E-14	3.875E-14
U-238+D	Ra-226+D1	3.359E-07	6.055E-18	1.793E-17	7.390E-17	1.433E-16	1.967E-15	1.114E-14	5.224E-13	1.673E-12
U-238+D	Pb-210+D	3.359E-07	2.050E-16	6.059E-16	2.432E-15	4.366E-15	1.742E-14	3.402E-14	3.467E-13	1.047E-12
U-238+D	∑DSR(j)		1.744E-06	1.741E-06	1.726E-06	1.709E-06	1.582E-06	1.268E-06	1.913E-07	1.796E-08

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	4.434E-13	2.302E-12	2.298E-12	2.279E-12	2.255E-12	2.088E-12	1.674E-12	2.525E-13	2.370E-14
U-238+D	U-234	4.434E-13	3.499E-20	1.278E-19	8.369E-19	2.466E-18	4.195E-17	7.319E-17	5.390E-17	9.782E-18
U-238+D	Th-230	4.434E-13	2.694E-25	1.605E-24	1.874E-23	6.569E-23	1.322E-21	4.488E-21	3.697E-20	5.114E-20
U-238+D	Ra-226+D1	4.434E-13	7.993E-24	2.367E-23	9.754E-23	1.892E-22	2.597E-21	1.471E-20	6.896E-19	2.208E-18
U-238+D	Pb-210+D1	4.434E-13	9.900E-23	2.926E-22	1.174E-21	2.109E-21	8.410E-21	1.643E-20	1.674E-19	5.058E-19
U-238+D	∑DSR(j)		2.302E-12	2.298E-12	2.279E-12	2.255E-12	2.088E-12	1.674E-12	2.525E-13	2.371E-14
U-238+D	U-238+D	6.383E-15	3.314E-14	3.307E-14	3.280E-14	3.246E-14	3.005E-14	2.409E-14	3.634E-15	3.411E-16
U-238+D	U-234	6.383E-15	5.037E-22	1.839E-21	1.205E-20	3.550E-20	6.039E-19	1.054E-18	7.758E-19	1.408E-19
U-238+D	Th-230	6.383E-15	3.877E-27	2.310E-26	2.697E-25	9.455E-25	1.902E-23	6.461E-23	5.322E-22	7.362E-22
U-238+D	Ra-226+D1	6.383E-15	1.150E-25	3.407E-25	1.404E-24	2.724E-24	3.738E-23	2.117E-22	9.926E-21	3.178E-20
U-238+D	Pb-210+D2	6.383E-15	1.422E-24	4.204E-24	1.687E-23	3.029E-23	1.210E-22	2.376E-22	2.561E-21	7.810E-21
U-238+D	∑DSR(j)		3.314E-14	3.307E-14	3.280E-14	3.246E-14	3.005E-14	2.409E-14	3.635E-15	3.413E-16
U-238+D	U-238+D	3.196E-07	1.659E-06	1.656E-06	1.642E-06	1.626E-06	1.505E-06	1.206E-06	1.820E-07	1.708E-08
U-238+D	U-234	3.196E-07	2.522E-14	9.209E-14	6.032E-13	1.777E-12	3.024E-11	5.275E-11	3.885E-11	7.051E-12
U-238+D	Th-230	3.196E-07	1.941E-19	1.157E-18	1.351E-17	4.734E-17	9.525E-16	3.235E-15	2.665E-14	3.686E-14
U-238+D	Ra-226+D2	3.196E-07	5.756E-18	1.703E-17	6.918E-17	1.288E-16	1.119E-15	5.350E-15	2.303E-13	7.355E-13
U-238+D	Pb-210+D	3.196E-07	1.951E-16	5.765E-16	2.314E-15	4.154E-15	1.657E-14	3.237E-14	3.298E-13	9.964E-13
U-238+D	∑DSR(j)		1.659E-06	1.656E-06	1.642E-06	1.626E-06	1.505E-06	1.207E-06	1.820E-07	1.709E-08
U-238+D	U-238+D	4.219E-13	2.190E-12	2.186E-12	2.168E-12	2.146E-12	1.986E-12	1.593E-12	2.402E-13	2.255E-14
U-238+D	U-234	4.219E-13	3.329E-20	1.216E-19	7.963E-19	2.346E-18	3.991E-17	6.964E-17	5.128E-17	9.307E-18
U-238+D	Th-230	4.219E-13	2.563E-25	1.527E-24	1.783E-23	6.249E-23	1.257E-21	4.270E-21	3.518E-20	4.866E-20
U-238+D	Ra-226+D2	4.219E-13	7.598E-24	2.248E-23	9.132E-23	1.701E-22	1.477E-21	7.062E-21	3.040E-19	9.709E-19
U-238+D	Pb-210+D1	4.219E-13	9.419E-23	2.784E-22	1.117E-21	2.006E-21	8.002E-21	1.563E-20	1.593E-19	4.812E-19
U-238+D	∑DSR(j)		2.190E-12	2.186E-12	2.168E-12	2.146E-12	1.986E-12	1.593E-12	2.402E-13	2.256E-14
U-238+D	U-238+D	6.073E-15	3.153E-14	3.146E-14	3.120E-14	3.089E-14	2.859E-14	2.292E-14	3.457E-15	3.245E-16
U-238+D	U-234	6.073E-15	4.792E-22	1.750E-21	1.146E-20	3.377E-20	5.745E-19	1.002E-18	7.381E-19	1.340E-19
U-238+D	Th-230	6.073E-15	3.689E-27	2.198E-26	2.566E-25	8.995E-25	1.810E-23	6.147E-23	5.063E-22	7.004E-22
U-238+D	Ra-226+D2	6.073E-15	1.094E-25	3.236E-25	1.314E-24	2.448E-24	2.126E-23	1.017E-22	4.376E-21	1.397E-20
U-238+D	Pb-210+D2	6.073E-15	1.353E-24	3.999E-24	1.605E-23	2.882E-23	1.151E-22	2.261E-22	2.436E-21	7.430E-21
U-238+D	∑DSR(j)		3.153E-14	3.146E-14	3.120E-14	3.089E-14	2.859E-14	2.292E-14	3.458E-15	3.247E-16
U-238+D	U-238+D	6.713E-11	3.486E-10	3.478E-10	3.450E-10	3.414E-10	3.161E-10	2.534E-10	3.822E-11	3.588E-12
U-238+D	U-234	6.713E-11	5.298E-18	1.934E-17	1.267E-16	3.733E-16	6.351E-15	1.108E-14	8.159E-15	1.481E-15
U-238+D	Th-230	6.713E-11	4.078E-23	2.429E-22	2.837E-21	9.944E-21	2.001E-19	6.795E-19	5.597E-18	7.743E-18
U-238+D	Ra-226+D3	6.713E-11	1.209E-21	3.582E-21	1.474E-20	2.852E-20	3.819E-19	2.148E-18	1.004E-16	3.216E-16
U-238+D	Pb-210+D	6.713E-11	4.096E-20	1.211E-19	4.859E-19	8.725E-19	3.480E-18	6.798E-18	6.928E-17	2.093E-16
U-238+D	∑DSR(j)		3.486E-10	3.478E-10	3.450E-10	3.414E-10	3.161E-10	2.534E-10	3.823E-11	3.590E-12

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	8.862E-17	4.601E-16	4.591E-16	4.553E-16	4.507E-16	4.172E-16	3.345E-16	5.045E-17	4.736E-18
U-238+D	U-234	8.862E-17	6.993E-24	2.553E-23	1.673E-22	4.928E-22	8.384E-21	1.463E-20	1.077E-20	1.955E-21
U-238+D	Th-230	8.862E-17	5.383E-29	3.207E-28	3.745E-27	1.313E-26	2.641E-25	8.970E-25	7.388E-24	1.022E-23
U-238+D	Ra-226+D3	8.862E-17	1.596E-27	4.728E-27	1.946E-26	3.765E-26	5.041E-25	2.836E-24	1.326E-22	4.245E-22
U-238+D	Pb-210+D1	8.862E-17	1.978E-26	5.847E-26	2.347E-25	4.214E-25	1.681E-24	3.282E-24	3.345E-23	1.011E-22
U-238+D	∑DSR(j)		4.601E-16	4.591E-16	4.553E-16	4.507E-16	4.172E-16	3.345E-16	5.046E-17	4.738E-18
U-238+D	U-238+D	1.276E-18	6.623E-18	6.609E-18	6.554E-18	6.487E-18	6.005E-18	4.815E-18	7.262E-19	6.816E-20
U-238+D	U-234	1.276E-18	1.007E-25	3.675E-25	2.407E-24	7.094E-24	1.207E-22	2.105E-22	1.550E-22	2.814E-23
U-238+D	Th-230	1.276E-18	7.748E-31	4.616E-30	5.390E-29	1.889E-28	3.801E-27	1.291E-26	1.063E-25	1.471E-25
U-238+D	Ra-226+D3	1.276E-18	2.298E-29	6.805E-29	2.801E-28	5.419E-28	7.256E-27	4.082E-26	1.908E-24	6.110E-24
U-238+D	Pb-210+D2	1.276E-18	2.842E-28	8.400E-28	3.371E-27	6.054E-27	2.418E-26	4.750E-26	5.117E-25	1.561E-24
U-238+D	∑DSR(j)		6.623E-18	6.609E-18	6.554E-18	6.487E-18	6.006E-18	4.815E-18	7.263E-19	6.820E-20
U-238+D	U-238+D	3.200E-10	1.661E-09	1.658E-09	1.644E-09	1.628E-09	1.507E-09	1.208E-09	1.822E-10	1.710E-11
U-238+D	U-234	3.200E-10	2.525E-17	9.220E-17	6.040E-16	1.780E-15	3.027E-14	5.282E-14	3.889E-14	7.059E-15
U-238+D	Th-230	3.200E-10	1.944E-22	1.158E-21	1.352E-20	4.740E-20	9.537E-19	3.239E-18	2.668E-17	3.691E-17
U-238+D	Ra-226+D4	3.200E-10	5.760E-21	1.703E-20	6.868E-20	1.251E-19	7.383E-19	2.692E-18	9.521E-17	3.018E-16
U-238+D	Pb-210+D	3.200E-10	1.953E-19	5.771E-19	2.316E-18	4.159E-18	1.659E-17	3.240E-17	3.302E-16	9.976E-16
U-238+D	∑DSR(j)		1.661E-09	1.658E-09	1.644E-09	1.628E-09	1.507E-09	1.208E-09	1.822E-10	1.711E-11
U-238+D	U-238+D	4.224E-16	2.193E-15	2.189E-15	2.171E-15	2.148E-15	1.989E-15	1.594E-15	2.405E-16	2.257E-17
U-238+D	U-234	4.224E-16	3.333E-23	1.217E-22	7.972E-22	2.349E-21	3.996E-20	6.972E-20	5.134E-20	9.318E-21
U-238+D	Th-230	4.224E-16	2.566E-28	1.529E-27	1.785E-26	6.257E-26	1.259E-24	4.276E-24	3.522E-23	4.872E-23
U-238+D	Ra-226+D4	4.224E-16	7.604E-27	2.248E-26	9.066E-26	1.652E-25	9.745E-25	3.553E-24	1.257E-22	3.984E-22
U-238+D	Pb-210+D1	4.224E-16	9.430E-26	2.787E-25	1.119E-24	2.009E-24	8.011E-24	1.565E-23	1.595E-22	4.818E-22
U-238+D	∑DSR(j)		2.193E-15	2.189E-15	2.171E-15	2.148E-15	1.989E-15	1.595E-15	2.405E-16	2.258E-17
U-238+D	U-238+D	6.080E-18	3.157E-17	3.150E-17	3.124E-17	3.092E-17	2.863E-17	2.295E-17	3.461E-18	3.249E-19
U-238+D	U-234	6.080E-18	4.798E-25	1.752E-24	1.148E-23	3.381E-23	5.752E-22	1.004E-21	7.390E-22	1.341E-22
U-238+D	Th-230	6.080E-18	3.693E-30	2.200E-29	2.569E-28	9.006E-28	1.812E-26	6.154E-26	5.069E-25	7.013E-25
U-238+D	Ra-226+D4	6.080E-18	1.094E-28	3.236E-28	1.305E-27	2.378E-27	1.403E-26	5.114E-26	1.809E-24	5.734E-24
U-238+D	Pb-210+D2	6.080E-18	1.355E-27	4.004E-27	1.607E-26	2.886E-26	1.152E-25	2.264E-25	2.439E-24	7.439E-24
U-238+D	∑DSR(j)		3.157E-17	3.150E-17	3.124E-17	3.092E-17	2.863E-17	2.295E-17	3.462E-18	3.251E-19
U-238+D1	U-238+D1	9.980E-01	1.429E-01	1.557E-01	2.063E-01	2.683E-01	7.142E-01	6.199E-01	9.190E-02	8.381E-03
U-238+D1	U-234	9.980E-01	7.875E-08	2.876E-07	1.884E-06	5.550E-06	9.442E-05	1.647E-04	1.213E-04	2.202E-05
U-238+D1	Th-230	9.980E-01	6.062E-13	3.611E-12	4.217E-11	1.478E-10	2.974E-09	1.010E-08	8.321E-08	1.151E-07
U-238+D1	Ra-226+D	9.980E-01	1.798E-11	5.321E-11	2.164E-10	4.041E-10	3.661E-09	1.787E-08	7.780E-07	2.485E-06
U-238+D1	Pb-210+D	9.980E-01	6.090E-10	1.800E-09	7.223E-09	1.297E-08	5.174E-08	1.011E-07	1.030E-06	3.111E-06
U-238+D1	∑DSR(j)		1.429E-01	1.557E-01	2.063E-01	2.683E-01	7.143E-01	6.201E-01	9.203E-02	8.408E-03

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	1.317E-06	1.886E-07	2.055E-07	2.724E-07	3.541E-07	9.427E-07	8.183E-07	1.213E-07	1.106E-08
U-238+D1	U-234	1.317E-06	1.040E-13	3.796E-13	2.486E-12	7.326E-12	1.246E-10	2.174E-10	1.601E-10	2.906E-11
U-238+D1	Th-230	1.317E-06	8.002E-19	4.767E-18	5.567E-17	1.951E-16	3.926E-15	1.333E-14	1.098E-13	1.519E-13
U-238+D1	Ra-226+D	1.317E-06	2.374E-17	7.023E-17	2.856E-16	5.335E-16	4.832E-15	2.358E-14	1.027E-12	3.281E-12
U-238+D1	Pb-210+D1	1.317E-06	2.941E-16	8.693E-16	3.489E-15	6.264E-15	2.499E-14	4.880E-14	4.973E-13	1.503E-12
U-238+D1	∑DSR(j)		1.886E-07	2.055E-07	2.724E-07	3.542E-07	9.428E-07	8.185E-07	1.215E-07	1.110E-08
U-238+D1	U-238+D1	1.896E-08	2.715E-09	2.958E-09	3.920E-09	5.098E-09	1.357E-08	1.178E-08	1.746E-09	1.592E-10
U-238+D1	U-234	1.896E-08	1.496E-15	5.464E-15	3.579E-14	1.055E-13	1.794E-12	3.130E-12	2.305E-12	4.183E-13
U-238+D1	Th-230	1.896E-08	1.152E-20	6.862E-20	8.013E-19	2.809E-18	5.651E-17	1.919E-16	1.581E-15	2.187E-15
U-238+D1	Ra-226+D	1.896E-08	3.417E-19	1.011E-18	4.111E-18	7.679E-18	6.956E-17	3.394E-16	1.478E-14	4.722E-14
U-238+D1	Pb-210+D2	1.896E-08	4.225E-18	1.249E-17	5.012E-17	8.999E-17	3.594E-16	7.061E-16	7.608E-15	2.320E-14
U-238+D1	∑DSR(j)		2.715E-09	2.958E-09	3.920E-09	5.098E-09	1.357E-08	1.178E-08	1.749E-09	1.597E-10
U-238+D1	U-238+D1	2.096E-04	3.001E-05	3.270E-05	4.334E-05	5.635E-05	1.500E-04	1.302E-04	1.930E-05	1.760E-06
U-238+D1	U-234	2.096E-04	1.654E-11	6.040E-11	3.956E-10	1.166E-09	1.983E-08	3.460E-08	2.548E-08	4.624E-09
U-238+D1	Th-230	2.096E-04	1.273E-16	7.586E-16	8.858E-15	3.105E-14	6.247E-13	2.122E-12	1.748E-11	2.418E-11
U-238+D1	Ra-226+D1	2.096E-04	3.778E-15	1.119E-14	4.611E-14	8.945E-14	1.228E-12	6.952E-12	3.260E-10	1.044E-09
U-238+D1	Pb-210+D	2.096E-04	1.279E-13	3.780E-13	1.517E-12	2.724E-12	1.087E-11	2.123E-11	2.163E-10	6.535E-10
U-238+D1	∑DSR(j)		3.001E-05	3.270E-05	4.334E-05	5.635E-05	1.500E-04	1.302E-04	1.933E-05	1.767E-06
U-238+D1	U-238+D1	2.767E-10	3.962E-11	4.317E-11	5.721E-11	7.439E-11	1.980E-10	1.719E-10	2.548E-11	2.324E-12
U-238+D1	U-234	2.767E-10	2.184E-17	7.973E-17	5.222E-16	1.539E-15	2.618E-14	4.567E-14	3.363E-14	6.104E-15
U-238+D1	Th-230	2.767E-10	1.681E-22	1.001E-21	1.169E-20	4.099E-20	8.246E-19	2.801E-18	2.307E-17	3.191E-17
U-238+D1	Ra-226+D1	2.767E-10	4.987E-21	1.477E-20	6.087E-20	1.181E-19	1.620E-18	9.176E-18	4.303E-16	1.378E-15
U-238+D1	Pb-210+D1	2.767E-10	6.178E-20	1.826E-19	7.328E-19	1.316E-18	5.248E-18	1.025E-17	1.045E-16	3.156E-16
U-238+D1	∑DSR(j)		3.962E-11	4.317E-11	5.721E-11	7.439E-11	1.980E-10	1.719E-10	2.552E-11	2.331E-12
U-238+D1	U-238+D1	3.983E-12	5.703E-13	6.214E-13	8.235E-13	1.071E-12	2.850E-12	2.474E-12	3.668E-13	3.345E-14
U-238+D1	U-234	3.983E-12	3.143E-19	1.148E-18	7.517E-18	2.215E-17	3.768E-16	6.574E-16	4.841E-16	8.786E-17
U-238+D1	Th-230	3.983E-12	2.419E-24	1.441E-23	1.683E-22	5.900E-22	1.187E-20	4.031E-20	3.321E-19	4.594E-19
U-238+D1	Ra-226+D1	3.983E-12	7.179E-23	2.126E-22	8.761E-22	1.700E-21	2.332E-20	1.321E-19	6.194E-18	1.983E-17
U-238+D1	Pb-210+D2	3.983E-12	8.875E-22	2.623E-21	1.053E-20	1.890E-20	7.549E-20	1.483E-19	1.598E-18	4.873E-18
U-238+D1	∑DSR(j)		5.703E-13	6.214E-13	8.235E-13	1.071E-12	2.850E-12	2.475E-12	3.673E-13	3.356E-14
U-238+D1	U-238+D1	1.994E-04	2.856E-05	3.111E-05	4.123E-05	5.362E-05	1.427E-04	1.239E-04	1.837E-05	1.675E-06
U-238+D1	U-234	1.994E-04	1.574E-11	5.747E-11	3.764E-10	1.109E-09	1.887E-08	3.292E-08	2.424E-08	4.400E-09
U-238+D1	Th-230	1.994E-04	1.211E-16	7.217E-16	8.428E-15	2.954E-14	5.944E-13	2.019E-12	1.663E-11	2.300E-11
U-238+D1	Ra-226+D2	1.994E-04	3.592E-15	1.063E-14	4.317E-14	8.040E-14	6.983E-13	3.339E-12	1.437E-10	4.590E-10
U-238+D1	Pb-210+D	1.994E-04	1.217E-13	3.597E-13	1.443E-12	2.592E-12	1.034E-11	2.020E-11	2.058E-10	6.218E-10
U-238+D1	∑DSR(j)		2.856E-05	3.111E-05	4.123E-05	5.362E-05	1.427E-04	1.239E-04	1.839E-05	1.680E-06

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.633E-10	3.769E-11	4.107E-11	5.443E-11	7.077E-11	1.884E-10	1.635E-10	2.424E-11	2.211E-12
U-238+D1	U-234	2.633E-10	2.077E-17	7.586E-17	4.969E-16	1.464E-15	2.491E-14	4.345E-14	3.200E-14	5.807E-15
U-238+D1	Th-230	2.633E-10	1.599E-22	9.527E-22	1.113E-20	3.900E-20	7.846E-19	2.665E-18	2.195E-17	3.036E-17
U-238+D1	Ra-226+D2	2.633E-10	4.741E-21	1.403E-20	5.698E-20	1.061E-19	9.218E-19	4.407E-18	1.897E-16	6.058E-16
U-238+D1	Pb-210+D1	2.633E-10	5.877E-20	1.737E-19	6.971E-19	1.252E-18	4.993E-18	9.752E-18	9.938E-17	3.003E-16
U-238+D1	∑DSR(j)		3.769E-11	4.107E-11	5.443E-11	7.077E-11	1.884E-10	1.636E-10	2.428E-11	2.217E-12
U-238+D1	U-238+D1	3.789E-12	5.425E-13	5.912E-13	7.835E-13	1.019E-12	2.712E-12	2.354E-12	3.490E-13	3.182E-14
U-238+D1	U-234	3.789E-12	2.990E-19	1.092E-18	7.152E-18	2.107E-17	3.585E-16	6.255E-16	4.606E-16	8.359E-17
U-238+D1	Th-230	3.789E-12	2.302E-24	1.371E-23	1.601E-22	5.613E-22	1.129E-20	3.836E-20	3.159E-19	4.371E-19
U-238+D1	Ra-226+D2	3.789E-12	6.825E-23	2.019E-22	8.202E-22	1.528E-21	1.327E-20	6.343E-20	2.731E-18	8.720E-18
U-238+D1	Pb-210+D2	3.789E-12	8.444E-22	2.496E-21	1.002E-20	1.799E-20	7.183E-20	1.411E-19	1.520E-18	4.637E-18
U-238+D1	∑DSR(j)		5.425E-13	5.912E-13	7.835E-13	1.019E-12	2.712E-12	2.354E-12	3.494E-13	3.192E-14
U-238+D1	U-238+D1	4.189E-08	5.998E-09	6.535E-09	8.661E-09	1.126E-08	2.998E-08	2.602E-08	3.858E-09	3.518E-10
U-238+D1	U-234	4.189E-08	3.306E-15	1.207E-14	7.906E-14	2.330E-13	3.963E-12	6.914E-12	5.091E-12	9.241E-13
U-238+D1	Th-230	4.189E-08	2.545E-20	1.516E-19	1.770E-18	6.205E-18	1.248E-16	4.240E-16	3.493E-15	4.832E-15
U-238+D1	Ra-226+D3	4.189E-08	7.547E-19	2.235E-18	9.200E-18	1.780E-17	2.383E-16	1.341E-15	6.267E-14	2.007E-13
U-238+D1	Pb-210+D	4.189E-08	2.556E-17	7.554E-17	3.032E-16	5.444E-16	2.172E-15	4.242E-15	4.323E-14	1.306E-13
U-238+D1	∑DSR(j)		5.998E-09	6.535E-09	8.661E-09	1.126E-08	2.998E-08	2.603E-08	3.863E-09	3.530E-10
U-238+D1	U-238+D1	5.530E-14	7.917E-15	8.627E-15	1.143E-14	1.487E-14	3.957E-14	3.435E-14	5.092E-15	4.644E-16
U-238+D1	U-234	5.530E-14	4.364E-21	1.593E-20	1.044E-19	3.075E-19	5.231E-18	9.127E-18	6.721E-18	1.220E-18
U-238+D1	Th-230	5.530E-14	3.359E-26	2.001E-25	2.337E-24	8.191E-24	1.648E-22	5.597E-22	4.610E-21	6.378E-21
U-238+D1	Ra-226+D3	5.530E-14	9.962E-25	2.950E-24	1.214E-23	2.349E-23	3.146E-22	1.770E-21	8.273E-20	2.649E-19
U-238+D1	Pb-210+D1	5.530E-14	1.234E-23	3.648E-23	1.464E-22	2.629E-22	1.049E-21	2.048E-21	2.087E-20	6.308E-20
U-238+D1	∑DSR(j)		7.917E-15	8.627E-15	1.143E-14	1.487E-14	3.957E-14	3.436E-14	5.099E-15	4.659E-16
U-238+D1	U-238+D1	7.959E-16	1.140E-16	1.242E-16	1.646E-16	2.140E-16	5.696E-16	4.944E-16	7.330E-17	6.684E-18
U-238+D1	U-234	7.959E-16	6.281E-23	2.293E-22	1.502E-21	4.426E-21	7.530E-20	1.314E-19	9.674E-20	1.756E-20
U-238+D1	Th-230	7.959E-16	4.835E-28	2.880E-27	3.364E-26	1.179E-25	2.372E-24	8.056E-24	6.636E-23	9.180E-23
U-238+D1	Ra-226+D3	7.959E-16	1.434E-26	4.247E-26	1.748E-25	3.382E-25	4.528E-24	2.547E-23	1.191E-21	3.813E-21
U-238+D1	Pb-210+D2	7.959E-16	1.774E-25	5.242E-25	2.104E-24	3.778E-24	1.509E-23	2.964E-23	3.193E-22	9.739E-22
U-238+D1	∑DSR(j)		1.140E-16	1.242E-16	1.646E-16	2.140E-16	5.696E-16	4.945E-16	7.340E-17	6.706E-18
U-238+D1	U-238+D1	1.997E-07	2.859E-08	3.115E-08	4.128E-08	5.368E-08	1.429E-07	1.240E-07	1.839E-08	1.677E-09
U-238+D1	U-234	1.997E-07	1.576E-14	5.754E-14	3.769E-13	1.110E-12	1.889E-11	3.296E-11	2.427E-11	4.405E-12
U-238+D1	Th-230	1.997E-07	1.213E-19	7.226E-19	8.438E-18	2.958E-17	5.951E-16	2.021E-15	1.665E-14	2.303E-14
U-238+D1	Ra-226+D4	1.997E-07	3.594E-18	1.063E-17	4.286E-17	7.809E-17	4.607E-16	1.680E-15	5.941E-14	1.883E-13
U-238+D1	Pb-210+D	1.997E-07	1.219E-16	3.601E-16	1.445E-15	2.595E-15	1.035E-14	2.022E-14	2.061E-13	6.225E-13
U-238+D1	∑DSR(j)		2.859E-08	3.115E-08	4.128E-08	5.368E-08	1.429E-07	1.241E-07	1.841E-08	1.682E-09

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.636E-13	3.774E-14	4.112E-14	5.450E-14	7.086E-14	1.886E-13	1.637E-13	2.427E-14	2.213E-15
U-238+D1	U-234	2.636E-13	2.080E-20	7.595E-20	4.975E-19	1.466E-18	2.494E-17	4.351E-17	3.204E-17	5.814E-18
U-238+D1	Th-230	2.636E-13	1.601E-25	9.538E-25	1.114E-23	3.904E-23	7.855E-22	2.668E-21	2.198E-20	3.040E-20
U-238+D1	Ra-226+D4	2.636E-13	4.745E-24	1.403E-23	5.657E-23	1.031E-22	6.081E-22	2.217E-21	7.843E-20	2.486E-19
U-238+D1	Pb-210+D1	2.636E-13	5.885E-23	1.739E-22	6.981E-22	1.253E-21	4.999E-21	9.764E-21	9.950E-20	3.007E-19
U-238+D1	∑DSR(j)		3.774E-14	4.112E-14	5.450E-14	7.086E-14	1.886E-13	1.638E-13	2.431E-14	2.220E-15
U-238+D1	U-238+D1	3.794E-15	5.432E-16	5.919E-16	7.844E-16	1.020E-15	2.715E-15	2.357E-15	3.494E-16	3.186E-17
U-238+D1	U-234	3.794E-15	2.994E-22	1.093E-21	7.161E-21	2.110E-20	3.589E-19	6.262E-19	4.611E-19	8.369E-20
U-238+D1	Th-230	3.794E-15	2.305E-27	1.373E-26	1.603E-25	5.620E-25	1.131E-23	3.840E-23	3.163E-22	4.376E-22
U-238+D1	Ra-226+D4	3.794E-15	6.829E-26	2.019E-25	8.143E-25	1.484E-24	8.753E-24	3.191E-23	1.129E-21	3.578E-21
U-238+D1	Pb-210+D2	3.794E-15	8.454E-25	2.499E-24	1.003E-23	1.801E-23	7.191E-23	1.413E-22	1.522E-21	4.642E-21
U-238+D1	∑DSR(j)		5.432E-16	5.919E-16	7.844E-16	1.020E-15	2.715E-15	2.357E-15	3.498E-16	3.195E-17

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

Single Radionuclide Soil Guidelines G(i,t) in pCi/g
Basic Radiation Dose Limit = 1.500E+01 mrem/yr

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	7.136E+00	7.304E+00	8.016E+00	9.005E+00	2.283E+01	7.306E+01	8.030E+05	9.034E+10
Ra-226	1.474E+00	1.447E+00	1.356E+00	1.270E+00	1.008E+00	9.628E-01	1.185E+00	1.574E+00
Sr-90	4.992E+00	4.831E+00	4.407E+00	4.266E+00	3.131E+01	3.784E+02	1.727E+11	*1.366E+14
U-238	9.917E+01	9.144E+01	6.988E+01	5.424E+01	2.077E+01	2.395E+01	1.613E+02	1.765E+03

*At specific activity limit

Summed Dose/Source Ratios DSR(i,t) in (mrem/yr)/(pCi/g)
and Single Radionuclide Soil Guidelines G(i,t) in pCi/g
at tmin = time of minimum single radionuclide soil guideline
and at tmax = time of maximum total dose = 9.93 ± 0.02 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	1.330E+00	0.000E+00	2.102E+00	7.136E+00	1.668E+00	8.991E+00
Ra-226	6.500E-01	102.9 ± 0.2	1.558E+01	9.628E-01	1.181E+01	1.271E+00
Sr-90	3.300E-01	9.37 ± 0.02	3.574E+00	4.196E+00	3.526E+00	4.254E+00
U-238	6.400E-01	55.5 ± 0.1	7.736E-01	1.939E+01	2.757E-01	5.440E+01

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	2.796E+00	2.731E+00	2.489E+00	2.216E+00	8.737E-01	2.730E-01	2.484E-05	2.208E-10
Ra-226	Ra-226	9.996E-01	6.537E+00	6.533E+00	6.518E+00	6.498E+00	6.346E+00	6.160E+00	4.857E+00	3.610E+00
Ra-226	Ra-226	1.319E-06	8.629E-06	8.624E-06	8.603E-06	8.578E-06	8.376E-06	8.131E-06	6.412E-06	4.765E-06
Ra-226	U-238	1.599E-03	1.844E-14	5.457E-14	2.219E-13	4.145E-13	3.755E-12	1.832E-11	7.980E-10	2.549E-09
Ra-226	U-238	2.111E-09	2.435E-20	7.203E-20	2.929E-19	5.472E-19	4.956E-18	2.419E-17	1.053E-15	3.365E-15
Ra-226	U-238	3.039E-11	3.505E-22	1.037E-21	4.216E-21	7.876E-21	7.134E-20	3.481E-19	1.516E-17	4.843E-17
Ra-226	U-238	9.980E-01	1.151E-11	3.405E-11	1.385E-10	2.587E-10	2.343E-09	1.143E-08	4.979E-07	1.591E-06
Ra-226	U-238	1.317E-06	1.519E-17	4.495E-17	1.828E-16	3.414E-16	3.093E-15	1.509E-14	6.573E-13	2.100E-12
Ra-226	U-238	1.896E-08	2.187E-19	6.470E-19	2.631E-18	4.914E-18	4.452E-17	2.172E-16	9.461E-15	3.022E-14
Ra-226	∑DOSE(j)		6.537E+00	6.533E+00	6.518E+00	6.498E+00	6.346E+00	6.160E+00	4.857E+00	3.610E+00
Pb-210	Ra-226	9.996E-01	7.542E-02	2.030E-01	6.688E-01	1.176E+00	3.326E+00	3.961E+00	3.367E+00	2.583E+00
Pb-210	Ra-226	2.100E-04	1.584E-05	4.264E-05	1.405E-04	2.471E-04	6.986E-04	8.319E-04	7.072E-04	5.426E-04
Pb-210	Ra-226	1.998E-04	1.507E-05	4.056E-05	1.337E-04	2.351E-04	6.647E-04	7.915E-04	6.728E-04	5.163E-04
Pb-210	Ra-226	4.196E-08	3.166E-09	8.520E-09	2.807E-08	4.938E-08	1.396E-07	1.663E-07	1.413E-07	1.084E-07
Pb-210	Ra-226	2.000E-07	1.509E-08	4.061E-08	1.338E-07	2.354E-07	6.655E-07	7.925E-07	6.737E-07	5.169E-07
Pb-210	U-238	1.599E-03	6.246E-13	1.846E-12	7.408E-12	1.330E-11	5.306E-11	1.037E-10	1.056E-09	3.191E-09
Pb-210	U-238	3.359E-07	1.312E-16	3.878E-16	1.556E-15	2.795E-15	1.115E-14	2.177E-14	2.219E-13	6.703E-13
Pb-210	U-238	3.196E-07	1.248E-16	3.689E-16	1.481E-15	2.659E-15	1.061E-14	2.071E-14	2.111E-13	6.377E-13
Pb-210	U-238	6.713E-11	2.622E-20	7.748E-20	3.110E-19	5.584E-19	2.227E-18	4.351E-18	4.434E-17	1.339E-16
Pb-210	U-238	3.200E-10	1.250E-19	3.693E-19	1.482E-18	2.662E-18	1.062E-17	2.074E-17	2.113E-16	6.385E-16
Pb-210	U-238	9.980E-01	3.897E-10	1.152E-09	4.623E-09	8.301E-09	3.311E-08	6.468E-08	6.591E-07	1.991E-06
Pb-210	U-238	2.096E-04	8.186E-14	2.419E-13	9.710E-13	1.744E-12	6.955E-12	1.359E-11	1.384E-10	4.182E-10
Pb-210	U-238	1.994E-04	7.789E-14	2.302E-13	9.238E-13	1.659E-12	6.617E-12	1.293E-11	1.317E-10	3.979E-10
Pb-210	U-238	4.189E-08	1.636E-17	4.835E-17	1.940E-16	3.484E-16	1.390E-15	2.715E-15	2.767E-14	8.358E-14
Pb-210	U-238	1.997E-07	7.798E-17	2.305E-16	9.250E-16	1.661E-15	6.626E-15	1.294E-14	1.319E-13	3.984E-13
Pb-210	∑DOSE(j)		7.546E-02	2.031E-01	6.691E-01	1.177E+00	3.327E+00	3.962E+00	3.368E+00	2.584E+00
Pb-210	Ra-226	1.319E-06	3.657E-08	9.846E-08	3.245E-07	5.708E-07	1.614E-06	1.921E-06	1.633E-06	1.253E-06
Pb-210	Ra-226	1.899E-08	5.972E-10	1.627E-09	5.392E-09	9.489E-09	2.674E-08	3.176E-08	2.689E-08	2.054E-08
Pb-210	Ra-226	2.771E-10	7.682E-12	2.068E-11	6.816E-11	1.199E-10	3.389E-10	4.036E-10	3.430E-10	2.631E-10
Pb-210	Ra-226	2.637E-10	7.309E-12	1.968E-11	6.485E-11	1.141E-10	3.225E-10	3.840E-10	3.263E-10	2.504E-10
Pb-210	Ra-226	5.538E-14	1.535E-15	4.133E-15	1.362E-14	2.396E-14	6.773E-14	8.065E-14	6.855E-14	5.259E-14
Pb-210	Ra-226	2.640E-13	7.317E-15	1.970E-14	6.493E-14	1.142E-13	3.228E-13	3.844E-13	3.267E-13	2.507E-13
Pb-210	U-238	2.111E-09	3.016E-19	8.915E-19	3.578E-18	6.424E-18	2.563E-17	5.005E-17	5.101E-16	1.541E-15
Pb-210	U-238	4.434E-13	6.336E-23	1.873E-22	7.515E-22	1.349E-21	5.383E-21	1.051E-20	1.071E-19	3.237E-19
Pb-210	U-238	4.219E-13	6.028E-23	1.781E-22	7.150E-22	1.284E-21	5.121E-21	1.000E-20	1.019E-19	3.080E-19
Pb-210	U-238	8.862E-17	1.266E-26	3.742E-26	1.502E-25	2.697E-25	1.076E-24	2.101E-24	2.141E-23	6.469E-23
Pb-210	U-238	4.224E-16	6.035E-26	1.784E-25	7.159E-25	1.285E-24	5.127E-24	1.001E-23	1.021E-22	3.084E-22
Pb-210	U-238	1.317E-06	1.882E-16	5.563E-16	2.233E-15	4.009E-15	1.599E-14	3.123E-14	3.183E-13	9.617E-13
Pb-210	U-238	2.767E-10	3.954E-20	1.169E-19	4.690E-19	8.421E-19	3.359E-18	6.560E-18	6.685E-17	2.020E-16
Pb-210	U-238	2.633E-10	3.761E-20	1.112E-19	4.461E-19	8.011E-19	3.195E-18	6.241E-18	6.360E-17	1.922E-16
Pb-210	U-238	5.530E-14	7.900E-24	2.335E-23	9.371E-23	1.683E-22	6.712E-22	1.311E-21	1.336E-20	4.037E-20
Pb-210	U-238	2.636E-13	3.767E-23	1.113E-22	4.468E-22	8.022E-22	3.200E-21	6.249E-21	6.368E-20	1.924E-19
Pb-210	∑DOSE(j)		3.718E-08	1.001E-07	3.300E-07	5.805E-07	1.641E-06	1.954E-06	1.661E-06	1.274E-06
Ra-226	Ra-226	1.899E-08	1.242E-07	1.241E-07	1.238E-07	1.235E-07	1.206E-07	1.170E-07	9.229E-08	6.858E-08
Ra-226	Ra-226	2.100E-04	2.775E-03	2.773E-03	2.766E-03	2.758E-03	2.693E-03	2.615E-03	2.061E-03	1.531E-03
Ra-226	∑DOSE(j)		2.775E-03	2.773E-03	2.767E-03	2.758E-03	2.694E-03	2.615E-03	2.061E-03	1.531E-03

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	3.663E-09	3.660E-09	3.652E-09	3.641E-09	3.555E-09	3.451E-09	2.721E-09	2.021E-09
Ra-226	Ra-226	3.989E-12	5.272E-11	5.269E-11	5.256E-11	5.241E-11	5.117E-11	4.968E-11	3.916E-11	2.909E-11
Ra-226	∑DOSE(j)		3.715E-09	3.713E-09	3.704E-09	3.693E-09	3.606E-09	3.501E-09	2.760E-09	2.050E-09
Pb-210	Ra-226	3.989E-12	1.254E-13	3.417E-13	1.133E-12	1.993E-12	5.617E-12	6.672E-12	5.647E-12	4.315E-12
Pb-210	Ra-226	3.795E-12	1.193E-13	3.251E-13	1.078E-12	1.896E-12	5.344E-12	6.348E-12	5.373E-12	4.105E-12
Pb-210	Ra-226	7.972E-16	2.507E-17	6.828E-17	2.263E-16	3.983E-16	1.123E-15	1.333E-15	1.129E-15	8.623E-16
Pb-210	Ra-226	3.800E-15	1.195E-16	3.255E-16	1.079E-15	1.899E-15	5.351E-15	6.356E-15	5.380E-15	4.110E-15
Pb-210	U-238	3.039E-11	4.334E-21	1.281E-20	5.140E-20	9.230E-20	3.686E-19	7.242E-19	7.803E-18	2.380E-17
Pb-210	U-238	6.383E-15	9.103E-25	2.690E-24	1.080E-23	1.939E-23	7.743E-23	1.521E-22	1.639E-21	4.998E-21
Pb-210	U-238	6.073E-15	8.660E-25	2.560E-24	1.027E-23	1.845E-23	7.367E-23	1.447E-22	1.559E-21	4.755E-21
Pb-210	U-238	1.276E-18	1.819E-28	5.376E-28	2.158E-27	3.874E-27	1.547E-26	3.040E-26	3.275E-25	9.989E-25
Pb-210	U-238	6.080E-18	8.671E-28	2.563E-27	1.028E-26	1.847E-26	7.376E-26	1.449E-25	1.561E-24	4.761E-24
Pb-210	U-238	1.896E-08	2.704E-18	7.992E-18	3.207E-17	5.760E-17	2.300E-16	4.519E-16	4.869E-15	1.485E-14
Pb-210	U-238	3.983E-12	5.680E-22	1.679E-21	6.737E-21	1.210E-20	4.831E-20	9.492E-20	1.023E-18	3.119E-18
Pb-210	U-238	3.789E-12	5.404E-22	1.597E-21	6.410E-21	1.151E-20	4.597E-20	9.031E-20	9.730E-19	2.967E-18
Pb-210	U-238	7.959E-16	1.135E-25	3.355E-25	1.346E-24	2.418E-24	9.655E-24	1.897E-23	2.044E-22	6.233E-22
Pb-210	U-238	3.794E-15	5.411E-25	1.599E-24	6.418E-24	1.152E-23	4.602E-23	9.042E-23	9.742E-22	2.971E-21
Pb-210	∑DOSE(j)		2.449E-13	6.672E-13	2.211E-12	3.892E-12	1.097E-11	1.303E-11	1.103E-11	8.440E-12
Ra-226	Ra-226	1.998E-04	1.205E-03	1.204E-03	1.201E-03	1.198E-03	1.170E-03	1.136E-03	8.954E-04	6.654E-04
Ra-226	Ra-226	2.637E-10	1.591E-09	1.590E-09	1.586E-09	1.581E-09	1.544E-09	1.499E-09	1.182E-09	8.784E-10
Ra-226	U-238	3.196E-07	3.684E-18	1.090E-17	4.427E-17	8.246E-17	7.162E-16	3.424E-15	1.474E-13	4.707E-13
Ra-226	U-238	4.219E-13	4.863E-24	1.439E-23	5.844E-23	1.088E-22	9.454E-22	4.520E-21	1.946E-19	6.214E-19
Ra-226	U-238	6.073E-15	7.000E-26	2.071E-25	8.412E-25	1.567E-24	1.361E-23	6.506E-23	2.801E-21	8.944E-21
Ra-226	U-238	1.994E-04	2.299E-15	6.801E-15	2.763E-14	5.145E-14	4.469E-13	2.137E-12	9.199E-11	2.937E-10
Ra-226	U-238	2.633E-10	3.035E-21	8.977E-21	3.647E-20	6.792E-20	5.899E-19	2.820E-18	1.214E-16	3.877E-16
Ra-226	U-238	3.789E-12	4.368E-23	1.292E-22	5.249E-22	9.776E-22	8.491E-21	4.060E-20	1.748E-18	5.581E-18
Ra-226	∑DOSE(j)		1.205E-03	1.204E-03	1.201E-03	1.198E-03	1.170E-03	1.136E-03	8.954E-04	6.654E-04
Ra-226	Ra-226	3.795E-12	2.290E-11	2.288E-11	2.283E-11	2.276E-11	2.223E-11	2.158E-11	1.701E-11	1.264E-11
Ra-226	Ra-226	4.196E-08	5.332E-07	5.329E-07	5.316E-07	5.300E-07	5.176E-07	5.024E-07	3.961E-07	2.943E-07
Ra-226	∑DOSE(j)		5.332E-07	5.329E-07	5.316E-07	5.301E-07	5.176E-07	5.024E-07	3.961E-07	2.943E-07
Ra-226	Ra-226	5.538E-14	7.038E-13	7.034E-13	7.017E-13	6.997E-13	6.832E-13	6.632E-13	5.228E-13	3.884E-13
Ra-226	Ra-226	7.972E-16	1.013E-14	1.012E-14	1.010E-14	1.007E-14	9.834E-15	9.546E-15	7.526E-15	5.591E-15
Ra-226	∑DOSE(j)		7.140E-13	7.135E-13	7.118E-13	7.097E-13	6.931E-13	6.728E-13	5.304E-13	3.940E-13
Ra-226	Ra-226	2.000E-07	4.780E-07	4.777E-07	4.766E-07	4.752E-07	4.641E-07	4.505E-07	3.555E-07	2.645E-07
Ra-226	Ra-226	2.640E-13	6.310E-13	6.306E-13	6.291E-13	6.273E-13	6.126E-13	5.947E-13	4.693E-13	3.491E-13
Ra-226	U-238	3.200E-10	3.687E-21	1.090E-20	4.395E-20	8.010E-20	4.725E-19	1.723E-18	6.094E-17	1.932E-16
Ra-226	U-238	4.224E-16	4.866E-27	1.439E-26	5.802E-26	1.057E-25	6.237E-25	2.274E-24	8.044E-23	2.550E-22
Ra-226	U-238	6.080E-18	7.004E-29	2.070E-28	8.351E-28	1.521E-27	8.977E-27	3.273E-26	1.158E-24	3.670E-24
Ra-226	U-238	1.997E-07	2.300E-18	6.801E-18	2.743E-17	4.998E-17	2.948E-16	1.075E-15	3.802E-14	1.205E-13
Ra-226	U-238	2.636E-13	3.037E-24	8.978E-24	3.620E-23	6.597E-23	3.892E-22	1.419E-21	5.019E-20	1.591E-19
Ra-226	U-238	3.794E-15	4.371E-26	1.292E-25	5.211E-25	9.496E-25	5.602E-24	2.042E-23	7.225E-22	2.290E-21
Ra-226	∑DOSE(j)		4.780E-07	4.777E-07	4.766E-07	4.752E-07	4.641E-07	4.505E-07	3.555E-07	2.645E-07
Ra-226	Ra-226	3.800E-15	9.082E-15	9.077E-15	9.055E-15	9.029E-15	8.817E-15	8.560E-15	6.755E-15	5.025E-15

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	9.915E-01	1.025E+00	1.123E+00	1.160E+00	1.581E-01	1.308E-02	2.866E-11	4.274E-22
U-238	U-238	5.450E-07	1.681E-08	2.111E-08	3.812E-08	5.892E-08	2.086E-07	1.829E-07	2.706E-08	2.459E-09
U-238	U-238	1.599E-03	5.315E-03	5.303E-03	5.260E-03	5.206E-03	4.819E-03	3.864E-03	5.827E-04	5.470E-05
U-238	∑DOSE(j)		5.315E-03	5.303E-03	5.260E-03	5.206E-03	4.819E-03	3.864E-03	5.828E-04	5.470E-05
U-234	U-238	1.599E-03	8.077E-11	2.949E-10	1.932E-09	5.692E-09	9.684E-08	1.690E-07	1.244E-07	2.258E-08
U-234	U-238	3.039E-11	1.535E-18	5.604E-18	3.671E-17	1.082E-16	1.840E-15	3.210E-15	2.364E-15	4.290E-16
U-234	U-238	3.359E-07	1.697E-14	6.195E-14	4.058E-13	1.196E-12	2.034E-11	3.549E-11	2.613E-11	4.743E-12
U-234	U-238	4.434E-13	2.240E-20	8.177E-20	5.356E-19	1.578E-18	2.685E-17	4.684E-17	3.449E-17	6.260E-18
U-234	U-238	6.383E-15	3.224E-22	1.177E-21	7.710E-21	2.272E-20	3.865E-19	6.743E-19	4.965E-19	9.011E-20
U-234	U-238	3.196E-07	1.614E-14	5.894E-14	3.861E-13	1.138E-12	1.935E-11	3.376E-11	2.486E-11	4.512E-12
U-234	U-238	4.219E-13	2.131E-20	7.780E-20	5.096E-19	1.502E-18	2.555E-17	4.457E-17	3.282E-17	5.956E-18
U-234	U-238	6.073E-15	3.067E-22	1.120E-21	7.335E-21	2.161E-20	3.677E-19	6.415E-19	4.724E-19	8.573E-20
U-234	U-238	6.713E-11	3.390E-18	1.238E-17	8.109E-17	2.389E-16	4.065E-15	7.092E-15	5.222E-15	9.478E-16
U-234	U-238	8.862E-17	4.475E-24	1.634E-23	1.070E-22	3.154E-22	5.366E-21	9.361E-21	6.893E-21	1.251E-21
U-234	U-238	1.276E-18	6.442E-26	2.352E-25	1.541E-24	4.540E-24	7.723E-23	1.347E-22	9.922E-23	1.801E-23
U-234	U-238	3.200E-10	1.616E-17	5.901E-17	3.865E-16	1.139E-15	1.938E-14	3.380E-14	2.489E-14	4.518E-15
U-234	U-238	4.224E-16	2.133E-23	7.789E-23	5.102E-22	1.503E-21	2.558E-20	4.462E-20	3.286E-20	5.964E-21
U-234	U-238	6.080E-18	3.071E-25	1.121E-24	7.344E-24	2.164E-23	3.681E-22	6.423E-22	4.729E-22	8.584E-23
U-234	U-238	9.980E-01	5.040E-08	1.840E-07	1.206E-06	3.552E-06	6.043E-05	1.054E-04	7.763E-05	1.409E-05
U-234	U-238	1.317E-06	6.653E-14	2.429E-13	1.591E-12	4.689E-12	7.976E-11	1.392E-10	1.025E-10	1.860E-11
U-234	U-238	1.896E-08	9.577E-16	3.497E-15	2.290E-14	6.749E-14	1.148E-12	2.003E-12	1.475E-12	2.677E-13
U-234	U-238	2.096E-04	1.059E-11	3.866E-11	2.532E-10	7.461E-10	1.269E-08	2.214E-08	1.631E-08	2.959E-09
U-234	U-238	2.767E-10	1.397E-17	5.103E-17	3.342E-16	9.848E-16	1.675E-14	2.923E-14	2.152E-14	3.907E-15
U-234	U-238	3.983E-12	2.011E-19	7.345E-19	4.811E-18	1.418E-17	2.412E-16	4.207E-16	3.098E-16	5.623E-17
U-234	U-238	1.994E-04	1.007E-11	3.678E-11	2.409E-10	7.098E-10	1.208E-08	2.107E-08	1.551E-08	2.816E-09
U-234	U-238	2.633E-10	1.330E-17	4.855E-17	3.180E-16	9.370E-16	1.594E-14	2.781E-14	2.048E-14	3.717E-15
U-234	U-238	3.789E-12	1.914E-19	6.988E-19	4.577E-18	1.349E-17	2.294E-16	4.003E-16	2.948E-16	5.350E-17
U-234	U-238	4.189E-08	2.116E-15	7.725E-15	5.060E-14	1.491E-13	2.536E-12	4.425E-12	3.259E-12	5.914E-13
U-234	U-238	5.530E-14	2.793E-21	1.020E-20	6.679E-20	1.968E-19	3.348E-18	5.841E-18	4.301E-18	7.807E-19
U-234	U-238	7.959E-16	4.020E-23	1.468E-22	9.614E-22	2.833E-21	4.819E-20	8.408E-20	6.191E-20	1.124E-20
U-234	U-238	1.997E-07	1.008E-14	3.682E-14	2.412E-13	7.107E-13	1.209E-11	2.109E-11	1.553E-11	2.819E-12
U-234	U-238	2.636E-13	1.331E-20	4.861E-20	3.184E-19	9.381E-19	1.596E-17	2.784E-17	2.050E-17	3.721E-18
U-234	U-238	3.794E-15	1.916E-22	6.996E-22	4.583E-21	1.350E-20	2.297E-19	4.008E-19	2.951E-19	5.356E-20
U-234	∑DOSE(j)		5.050E-08	1.844E-07	1.208E-06	3.559E-06	6.055E-05	1.056E-04	7.779E-05	1.412E-05
Th-230	U-238	1.599E-03	6.217E-16	3.704E-15	4.326E-14	1.516E-13	3.051E-12	1.036E-11	8.534E-11	1.181E-10
Th-230	U-238	3.039E-11	1.181E-23	7.038E-23	8.219E-22	2.881E-21	5.796E-20	1.969E-19	1.622E-18	2.243E-18
Th-230	U-238	3.359E-07	1.306E-19	7.780E-19	9.086E-18	3.185E-17	6.407E-16	2.176E-15	1.793E-14	2.480E-14
Th-230	U-238	4.434E-13	1.724E-25	1.027E-24	1.199E-23	4.204E-23	8.458E-22	2.873E-21	2.366E-20	3.273E-20
Th-230	U-238	6.383E-15	2.481E-27	1.478E-26	1.726E-25	6.051E-25	1.217E-23	4.135E-23	3.406E-22	4.711E-22
Th-230	U-238	3.196E-07	1.242E-19	7.402E-19	8.644E-18	3.030E-17	6.096E-16	2.070E-15	1.705E-14	2.359E-14
Th-230	U-238	4.219E-13	1.640E-25	9.771E-25	1.141E-23	4.000E-23	8.047E-22	2.733E-21	2.251E-20	3.114E-20
Th-230	U-238	6.073E-15	2.361E-27	1.406E-26	1.642E-25	5.757E-25	1.158E-23	3.934E-23	3.240E-22	4.483E-22
Th-230	U-238	6.713E-11	2.610E-23	1.555E-22	1.816E-21	6.364E-21	1.280E-19	4.349E-19	3.582E-18	4.955E-18
Th-230	U-238	8.862E-17	3.381E-29	2.052E-28	2.397E-27	8.401E-27	1.690E-25	5.741E-25	4.729E-24	6.541E-24
Th-230	U-238	1.276E-18	0.000E+00	2.450E-30	3.413E-29	1.205E-28	2.433E-27	8.263E-27	6.806E-26	9.415E-26
Th-230	U-238	3.200E-10	1.244E-22	7.411E-22	8.655E-21	3.034E-20	6.104E-19	2.073E-18	1.708E-17	2.362E-17

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	1.642E-28	9.783E-28	1.142E-26	4.004E-26	8.057E-25	2.736E-24	2.254E-23	3.118E-23
Th-230	U-238	6.080E-18	1.333E-30	1.388E-29	1.644E-28	5.764E-28	1.160E-26	3.939E-26	3.244E-25	4.488E-25
Th-230	U-238	9.980E-01	3.880E-13	2.311E-12	2.699E-11	9.461E-11	1.904E-09	6.465E-09	5.325E-08	7.367E-08
Th-230	U-238	1.317E-06	5.121E-19	3.051E-18	3.563E-17	1.249E-16	2.513E-15	8.534E-15	7.030E-14	9.724E-14
Th-230	U-238	1.896E-08	7.371E-21	4.391E-20	5.128E-19	1.798E-18	3.617E-17	1.228E-16	1.012E-15	1.400E-15
Th-230	U-238	2.096E-04	8.149E-17	4.855E-16	5.669E-15	1.987E-14	3.998E-13	1.358E-12	1.119E-11	1.547E-11
Th-230	U-238	2.767E-10	1.076E-22	6.408E-22	7.484E-21	2.623E-20	5.278E-19	1.793E-18	1.477E-17	2.042E-17
Th-230	U-238	3.983E-12	1.548E-24	9.224E-24	1.077E-22	3.776E-22	7.597E-21	2.580E-20	2.125E-19	2.940E-19
Th-230	U-238	1.994E-04	7.753E-17	4.619E-16	5.394E-15	1.891E-14	3.804E-13	1.292E-12	1.064E-11	1.472E-11
Th-230	U-238	2.633E-10	1.023E-22	6.097E-22	7.120E-21	2.496E-20	5.021E-19	1.705E-18	1.405E-17	1.943E-17
Th-230	U-238	3.789E-12	1.473E-24	8.776E-24	1.025E-22	3.592E-22	7.228E-21	2.455E-20	2.022E-19	2.797E-19
Th-230	U-238	4.189E-08	1.629E-20	9.702E-20	1.133E-18	3.971E-18	7.990E-17	2.714E-16	2.235E-15	3.092E-15
Th-230	U-238	5.530E-14	2.150E-26	1.281E-25	1.496E-24	5.242E-24	1.055E-22	3.582E-22	2.951E-21	4.082E-21
Th-230	U-238	7.959E-16	3.094E-28	1.843E-27	2.153E-26	7.546E-26	1.518E-24	5.156E-24	4.247E-23	5.875E-23
Th-230	U-238	1.997E-07	7.763E-20	4.625E-19	5.401E-18	1.893E-17	3.809E-16	1.294E-15	1.066E-14	1.474E-14
Th-230	U-238	2.636E-13	1.025E-25	6.104E-25	7.129E-24	2.499E-23	5.027E-22	1.707E-21	1.406E-20	1.946E-20
Th-230	U-238	3.794E-15	1.475E-27	8.787E-27	1.026E-25	3.597E-25	7.236E-24	2.458E-23	2.024E-22	2.801E-22
Th-230	∑DOSE(j)		3.888E-13	2.316E-12	2.705E-11	9.480E-11	1.907E-09	6.478E-09	5.336E-08	7.382E-08
U-238	U-238	2.111E-09	7.015E-09	7.001E-09	6.943E-09	6.872E-09	6.361E-09	5.100E-09	7.692E-10	7.220E-11
U-238	U-238	3.039E-11	1.010E-10	1.008E-10	9.993E-11	9.891E-11	9.157E-11	7.341E-11	1.107E-11	1.039E-12
U-238	∑DOSE(j)		7.116E-09	7.101E-09	7.043E-09	6.971E-09	6.453E-09	5.174E-09	7.803E-10	7.324E-11
U-234	U-238	2.111E-09	1.066E-16	3.893E-16	2.550E-15	7.514E-15	1.278E-13	2.230E-13	1.642E-13	2.981E-14
Th-230	U-238	2.111E-09	8.207E-22	4.889E-21	5.710E-20	2.001E-19	4.027E-18	1.368E-17	1.127E-16	1.558E-16
U-238	U-238	3.359E-07	1.116E-06	1.114E-06	1.105E-06	1.093E-06	1.012E-06	8.116E-07	1.224E-07	1.149E-08
U-238	U-238	4.434E-13	1.474E-12	1.470E-12	1.458E-12	1.443E-12	1.336E-12	1.071E-12	1.616E-13	1.517E-14
U-238	∑DOSE(j)		1.116E-06	1.114E-06	1.105E-06	1.094E-06	1.012E-06	8.116E-07	1.224E-07	1.149E-08
Ra-226	U-238	3.359E-07	3.875E-18	1.148E-17	4.729E-17	9.174E-17	1.259E-15	7.130E-15	3.343E-13	1.071E-12
Ra-226	U-238	4.434E-13	5.115E-24	1.515E-23	6.243E-23	1.211E-22	1.662E-21	9.412E-21	4.413E-19	1.413E-18
Ra-226	U-238	6.383E-15	7.363E-26	2.181E-25	8.986E-25	1.743E-24	2.392E-23	1.355E-22	6.352E-21	2.034E-20
Ra-226	U-238	2.096E-04	2.418E-15	7.162E-15	2.951E-14	5.725E-14	7.856E-13	4.449E-12	2.086E-10	6.680E-10
Ra-226	U-238	2.767E-10	3.192E-21	9.454E-21	3.896E-20	7.557E-20	1.037E-18	5.873E-18	2.754E-16	8.818E-16
Ra-226	U-238	3.983E-12	4.594E-23	1.361E-22	5.607E-22	1.088E-21	1.493E-20	8.453E-20	3.964E-18	1.269E-17
Ra-226	∑DOSE(j)		2.422E-15	7.174E-15	2.956E-14	5.734E-14	7.869E-13	4.456E-12	2.090E-10	6.691E-10
U-238	U-238	6.383E-15	2.121E-14	2.117E-14	2.099E-14	2.078E-14	1.923E-14	1.542E-14	2.326E-15	2.183E-16
U-238	U-238	3.196E-07	1.062E-06	1.060E-06	1.051E-06	1.040E-06	9.631E-07	7.722E-07	1.165E-07	1.093E-08
U-238	∑DOSE(j)		1.062E-06	1.060E-06	1.051E-06	1.040E-06	9.631E-07	7.722E-07	1.165E-07	1.093E-08
U-238	U-238	4.219E-13	1.402E-12	1.399E-12	1.387E-12	1.373E-12	1.271E-12	1.019E-12	1.537E-13	1.443E-14
U-238	U-238	6.073E-15	2.018E-14	2.014E-14	1.997E-14	1.977E-14	1.830E-14	1.467E-14	2.213E-15	2.077E-16
U-238	∑DOSE(j)		1.422E-12	1.419E-12	1.407E-12	1.393E-12	1.290E-12	1.034E-12	1.559E-13	1.464E-14
U-238	U-238	6.713E-11	2.231E-10	2.226E-10	2.208E-10	2.185E-10	2.023E-10	1.622E-10	2.446E-11	2.296E-12
U-238	U-238	8.862E-17	2.945E-16	2.939E-16	2.914E-16	2.885E-16	2.670E-16	2.141E-16	3.229E-17	3.031E-18
U-238	∑DOSE(j)		2.231E-10	2.226E-10	2.208E-10	2.185E-10	2.023E-10	1.622E-10	2.446E-11	2.296E-12

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	7.740E-22	2.292E-21	9.436E-21	1.825E-20	2.444E-19	1.375E-18	6.428E-17	2.058E-16
Ra-226	U-238	8.862E-17	1.021E-27	3.026E-27	1.246E-26	2.410E-26	3.226E-25	1.815E-24	8.485E-23	2.717E-22
Ra-226	U-238	1.276E-18	1.470E-29	4.344E-29	1.793E-28	3.468E-28	4.644E-27	2.612E-26	1.221E-24	3.911E-24
Ra-226	U-238	4.189E-08	4.830E-19	1.430E-18	5.888E-18	1.139E-17	1.525E-16	8.580E-16	4.011E-14	1.284E-13
Ra-226	U-238	5.530E-14	6.376E-25	1.888E-24	7.773E-24	1.504E-23	2.013E-22	1.133E-21	5.295E-20	1.695E-19
Ra-226	U-238	7.959E-16	9.177E-27	2.718E-26	1.119E-25	2.164E-25	2.898E-24	1.630E-23	7.621E-22	2.440E-21
Ra-226	∑DOSE(j)		4.838E-19	1.433E-18	5.898E-18	1.141E-17	1.528E-16	8.594E-16	4.018E-14	1.286E-13
U-238	U-238	1.276E-18	4.239E-18	4.230E-18	4.195E-18	4.152E-18	3.844E-18	3.082E-18	4.648E-19	4.362E-20
U-238	U-238	3.200E-10	1.063E-09	1.061E-09	1.052E-09	1.042E-09	9.643E-10	7.731E-10	1.166E-10	1.094E-11
U-238	∑DOSE(j)		1.063E-09	1.061E-09	1.052E-09	1.042E-09	9.643E-10	7.731E-10	1.166E-10	1.094E-11
U-238	U-238	4.224E-16	1.404E-15	1.401E-15	1.389E-15	1.375E-15	1.273E-15	1.020E-15	1.539E-16	1.445E-17
U-238	U-238	6.080E-18	2.020E-17	2.016E-17	1.999E-17	1.979E-17	1.832E-17	1.469E-17	2.215E-18	2.079E-19
U-238	∑DOSE(j)		1.424E-15	1.421E-15	1.409E-15	1.395E-15	1.291E-15	1.035E-15	1.561E-16	1.465E-17
U-238	U-238	9.980E-01	9.145E-02	9.964E-02	1.321E-01	1.717E-01	4.571E-01	3.967E-01	5.882E-02	5.364E-03
U-238	U-238	1.317E-06	1.207E-07	1.315E-07	1.743E-07	2.267E-07	6.033E-07	5.237E-07	7.764E-08	7.080E-09
U-238	∑DOSE(j)		9.145E-02	9.964E-02	1.321E-01	1.717E-01	4.571E-01	3.967E-01	5.882E-02	5.364E-03
U-238	U-238	1.896E-08	1.738E-09	1.893E-09	2.509E-09	3.262E-09	8.684E-09	7.538E-09	1.118E-09	1.019E-10
U-238	U-238	2.096E-04	1.921E-05	2.093E-05	2.774E-05	3.607E-05	9.600E-05	8.333E-05	1.235E-05	1.127E-06
U-238	∑DOSE(j)		1.921E-05	2.093E-05	2.774E-05	3.607E-05	9.601E-05	8.334E-05	1.236E-05	1.127E-06
U-238	U-238	2.767E-10	2.536E-11	2.763E-11	3.661E-11	4.761E-11	1.267E-10	1.100E-10	1.631E-11	1.487E-12
U-238	U-238	3.983E-12	3.650E-13	3.977E-13	5.270E-13	6.853E-13	1.824E-12	1.583E-12	2.347E-13	2.141E-14
U-238	∑DOSE(j)		2.572E-11	2.802E-11	3.714E-11	4.829E-11	1.285E-10	1.116E-10	1.654E-11	1.509E-12
U-238	U-238	1.994E-04	1.828E-05	1.991E-05	2.639E-05	3.431E-05	9.134E-05	7.928E-05	1.175E-05	1.072E-06
U-238	U-238	2.633E-10	2.412E-11	2.629E-11	3.483E-11	4.529E-11	1.206E-10	1.047E-10	1.552E-11	1.415E-12
U-238	∑DOSE(j)		1.828E-05	1.991E-05	2.639E-05	3.431E-05	9.134E-05	7.928E-05	1.175E-05	1.072E-06
U-238	U-238	3.789E-12	3.472E-13	3.783E-13	5.014E-13	6.520E-13	1.735E-12	1.506E-12	2.233E-13	2.037E-14
U-238	U-238	4.189E-08	3.839E-09	4.183E-09	5.543E-09	7.208E-09	1.919E-08	1.665E-08	2.469E-09	2.251E-10
U-238	∑DOSE(j)		3.839E-09	4.183E-09	5.544E-09	7.208E-09	1.919E-08	1.665E-08	2.469E-09	2.252E-10
U-238	U-238	5.530E-14	5.067E-15	5.521E-15	7.317E-15	9.514E-15	2.532E-14	2.198E-14	3.259E-15	2.972E-16
U-238	U-238	7.959E-16	7.293E-17	7.947E-17	1.053E-16	1.369E-16	3.645E-16	3.164E-16	4.691E-17	4.278E-18
U-238	∑DOSE(j)		5.140E-15	5.600E-15	7.422E-15	9.651E-15	2.569E-14	2.230E-14	3.306E-15	3.015E-16
U-238	U-238	1.997E-07	1.830E-08	1.994E-08	2.642E-08	3.436E-08	9.145E-08	7.938E-08	1.177E-08	1.073E-09
U-238	U-238	2.636E-13	2.415E-14	2.632E-14	3.488E-14	4.535E-14	1.207E-13	1.048E-13	1.553E-14	1.417E-15
U-238	∑DOSE(j)		1.830E-08	1.994E-08	2.642E-08	3.436E-08	9.145E-08	7.938E-08	1.177E-08	1.073E-09
U-238	U-238	3.794E-15	3.477E-16	3.788E-16	5.020E-16	6.528E-16	1.738E-15	1.508E-15	2.236E-16	2.039E-17

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

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.330E+00	1.299E+00	1.184E+00	1.054E+00	4.156E-01	1.298E-01	1.180E-05	1.046E-10
Ra-226	Ra-226	9.996E-01	6.497E-01	6.493E-01	6.478E-01	6.459E-01	6.307E-01	6.122E-01	4.825E-01	3.584E-01
Ra-226	Ra-226	1.319E-06	8.576E-07	8.571E-07	8.551E-07	8.526E-07	8.325E-07	8.081E-07	6.369E-07	4.730E-07
Ra-226	U-238	1.599E-03	0.000E+00	1.914E-18	2.369E-16	1.871E-15	2.118E-13	1.500E-12	7.711E-11	2.478E-10
Ra-226	U-238	2.111E-09	0.000E+00	2.526E-24	3.126E-22	2.470E-21	2.796E-19	1.980E-18	1.018E-16	3.271E-16
Ra-226	U-238	3.039E-11	0.000E+00	3.636E-26	4.500E-24	3.555E-23	4.024E-21	2.850E-20	1.465E-18	4.709E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.194E-15	1.478E-13	1.168E-12	1.322E-10	9.359E-10	4.812E-08	1.546E-07
Ra-226	U-238	1.317E-06	0.000E+00	1.576E-21	1.951E-19	1.541E-18	1.744E-16	1.235E-15	6.351E-14	2.041E-13
Ra-226	U-238	1.896E-08	0.000E+00	2.269E-23	2.808E-21	2.219E-20	2.511E-18	1.778E-17	9.142E-16	2.938E-15
Ra-226	∑S(j):		6.497E-01	6.493E-01	6.478E-01	6.459E-01	6.307E-01	6.122E-01	4.825E-01	3.584E-01
Pb-210	Ra-226	9.996E-01	0.000E+00	1.996E-02	9.358E-02	1.730E-01	4.963E-01	5.818E-01	4.793E-01	3.559E-01
Pb-210	Ra-226	2.100E-04	0.000E+00	4.192E-06	1.966E-05	3.635E-05	1.042E-04	1.222E-04	1.007E-04	7.476E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	3.989E-06	1.870E-05	3.458E-05	9.919E-05	1.163E-04	9.577E-05	7.113E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	8.378E-10	3.928E-09	7.263E-09	2.083E-08	2.442E-08	2.012E-08	1.494E-08
Pb-210	Ra-226	2.000E-07	0.000E+00	3.993E-09	1.872E-08	3.462E-08	9.931E-08	1.164E-07	9.589E-08	7.121E-08
Pb-210	U-238	1.599E-03	0.000E+00	1.485E-20	8.978E-18	1.378E-16	6.317E-14	7.149E-13	6.625E-11	2.312E-10
Pb-210	U-238	3.359E-07	0.000E+00	3.120E-24	1.886E-21	2.895E-20	1.327E-17	1.502E-16	1.392E-14	4.855E-14
Pb-210	U-238	3.196E-07	0.000E+00	2.968E-24	1.794E-21	2.755E-20	1.262E-17	1.429E-16	1.324E-14	4.620E-14
Pb-210	U-238	6.713E-11	0.000E+00	6.234E-28	3.768E-25	5.786E-24	2.652E-21	3.001E-20	2.781E-18	9.703E-18
Pb-210	U-238	3.200E-10	0.000E+00	2.972E-27	1.796E-24	2.758E-23	1.264E-20	1.430E-19	1.326E-17	4.625E-17
Pb-210	U-238	9.980E-01	0.000E+00	9.268E-18	5.602E-15	8.602E-14	3.942E-11	4.461E-10	4.134E-08	1.442E-07
Pb-210	U-238	2.096E-04	0.000E+00	1.947E-21	1.177E-18	1.807E-17	8.280E-15	9.370E-14	8.683E-12	3.030E-11
Pb-210	U-238	1.994E-04	0.000E+00	1.852E-21	1.120E-18	1.719E-17	7.878E-15	8.915E-14	8.261E-12	2.883E-11
Pb-210	U-238	4.189E-08	0.000E+00	3.890E-25	2.351E-22	3.611E-21	1.655E-18	1.873E-17	1.735E-15	6.055E-15
Pb-210	U-238	1.997E-07	0.000E+00	1.854E-24	1.121E-21	1.721E-20	7.887E-18	8.926E-17	8.271E-15	2.886E-14
Pb-210	∑S(j):		0.000E+00	1.997E-02	9.362E-02	1.731E-01	4.965E-01	5.821E-01	4.795E-01	3.561E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	2.635E-08	1.235E-07	2.284E-07	6.551E-07	7.680E-07	6.326E-07	4.698E-07
Pb-210	Ra-226	1.899E-08	0.000E+00	3.792E-10	1.778E-09	3.288E-09	9.430E-09	1.105E-08	9.106E-09	6.763E-09
Pb-210	Ra-226	2.771E-10	0.000E+00	5.534E-12	2.595E-11	4.798E-11	1.376E-10	1.613E-10	1.329E-10	9.868E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	5.265E-12	2.469E-11	4.565E-11	1.309E-10	1.535E-10	1.264E-10	9.389E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.106E-15	5.185E-15	9.588E-15	2.750E-14	3.224E-14	2.655E-14	1.972E-14
Pb-210	Ra-226	2.640E-13	0.000E+00	5.271E-15	2.472E-14	4.570E-14	1.311E-13	1.537E-13	1.266E-13	9.400E-14
Pb-210	U-238	2.111E-09	0.000E+00	1.960E-26	1.185E-23	1.820E-22	8.339E-20	9.437E-19	8.745E-17	3.051E-16
Pb-210	U-238	4.434E-13	0.000E+00	4.118E-30	2.489E-27	3.822E-26	1.752E-23	1.982E-22	1.837E-20	6.409E-20
Pb-210	U-238	4.219E-13	0.000E+00	3.918E-30	2.368E-27	3.636E-26	1.666E-23	1.886E-22	1.748E-20	6.098E-20
Pb-210	U-238	8.862E-17	0.000E+00	8.229E-34	4.974E-31	7.638E-30	3.500E-27	3.961E-26	3.671E-24	1.281E-23
Pb-210	U-238	4.224E-16	0.000E+00	3.923E-33	2.371E-30	3.641E-29	1.668E-26	1.888E-25	1.750E-23	6.105E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.223E-23	7.395E-21	1.135E-19	5.203E-17	5.889E-16	5.457E-14	1.904E-13
Pb-210	U-238	2.767E-10	0.000E+00	2.570E-27	1.553E-24	2.385E-23	1.093E-20	1.237E-19	1.146E-17	3.999E-17
Pb-210	U-238	2.633E-10	0.000E+00	2.445E-27	1.478E-24	2.269E-23	1.040E-20	1.177E-19	1.090E-17	3.805E-17
Pb-210	U-238	5.530E-14	0.000E+00	5.135E-31	3.104E-28	4.766E-27	2.184E-24	2.472E-23	2.291E-21	7.992E-21
Pb-210	U-238	2.636E-13	0.000E+00	2.448E-30	1.480E-27	2.272E-26	1.041E-23	1.178E-22	1.092E-20	3.810E-20
Pb-210	∑S(j):		0.000E+00	2.674E-08	1.254E-07	2.318E-07	6.648E-07	7.794E-07	6.420E-07	4.768E-07
Ra-226	Ra-226	1.899E-08	1.234E-08	1.234E-08	1.231E-08	1.227E-08	1.198E-08	1.163E-08	9.168E-09	6.809E-09
Ra-226	Ra-226	2.100E-04	1.365E-04	1.364E-04	1.361E-04	1.357E-04	1.325E-04	1.286E-04	1.014E-04	7.527E-05
Ra-226	∑S(j):		1.365E-04	1.364E-04	1.361E-04	1.357E-04	1.325E-04	1.286E-04	1.014E-04	7.528E-05

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	1.801E-10	1.800E-10	1.796E-10	1.791E-10	1.749E-10	1.697E-10	1.338E-10	9.936E-11
Ra-226	Ra-226	3.989E-12	2.593E-12	2.591E-12	2.585E-12	2.578E-12	2.517E-12	2.443E-12	1.926E-12	1.430E-12
Ra-226	∑S(j):		1.827E-10	1.826E-10	1.822E-10	1.817E-10	1.774E-10	1.722E-10	1.357E-10	1.008E-10
Pb-210	Ra-226	3.989E-12	0.000E+00	7.965E-14	3.735E-13	6.906E-13	1.981E-12	2.322E-12	1.913E-12	1.420E-12
Pb-210	Ra-226	3.795E-12	0.000E+00	7.578E-14	3.553E-13	6.570E-13	1.885E-12	2.209E-12	1.820E-12	1.351E-12
Pb-210	Ra-226	7.972E-16	0.000E+00	1.592E-17	7.464E-17	1.380E-16	3.958E-16	4.640E-16	3.822E-16	2.839E-16
Pb-210	Ra-226	3.800E-15	0.000E+00	7.588E-17	3.558E-16	6.578E-16	1.887E-15	2.212E-15	1.822E-15	1.353E-15
Pb-210	U-238	3.039E-11	0.000E+00	2.822E-28	1.706E-25	2.619E-24	1.200E-21	1.358E-20	1.259E-18	4.392E-18
Pb-210	U-238	6.383E-15	0.000E+00	5.927E-32	3.583E-29	5.501E-28	2.521E-25	2.853E-24	2.644E-22	9.225E-22
Pb-210	U-238	6.073E-15	0.000E+00	5.639E-32	3.409E-29	5.234E-28	2.399E-25	2.715E-24	2.515E-22	8.777E-22
Pb-210	U-238	1.276E-18	0.000E+00	1.184E-35	7.160E-33	1.099E-31	5.038E-29	5.702E-28	5.284E-26	1.844E-25
Pb-210	U-238	6.080E-18	0.000E+00	5.646E-35	3.413E-32	5.240E-31	2.402E-28	2.718E-27	2.518E-25	8.788E-25
Pb-210	U-238	1.896E-08	0.000E+00	1.761E-25	1.064E-22	1.634E-21	7.490E-19	8.476E-18	7.854E-16	2.741E-15
Pb-210	U-238	3.983E-12	0.000E+00	3.699E-29	2.236E-26	3.433E-25	1.573E-22	1.780E-21	1.650E-19	5.757E-19
Pb-210	U-238	3.789E-12	0.000E+00	3.519E-29	2.127E-26	3.266E-25	1.497E-22	1.694E-21	1.570E-19	5.477E-19
Pb-210	U-238	7.959E-16	0.000E+00	7.391E-33	4.468E-30	6.860E-29	3.144E-26	3.558E-25	3.297E-23	1.150E-22
Pb-210	U-238	3.794E-15	0.000E+00	3.523E-32	2.130E-29	3.270E-28	1.499E-25	1.696E-24	1.572E-22	5.484E-22
Pb-210	∑S(j):		0.000E+00	1.555E-13	7.292E-13	1.348E-12	3.868E-12	4.534E-12	3.735E-12	2.776E-12
Ra-226	Ra-226	1.998E-04	1.298E-04	1.298E-04	1.295E-04	1.291E-04	1.260E-04	1.223E-04	9.643E-05	7.161E-05
Ra-226	Ra-226	2.637E-10	1.714E-10	1.713E-10	1.709E-10	1.704E-10	1.664E-10	1.615E-10	1.273E-10	9.453E-11
Ra-226	U-238	3.196E-07	0.000E+00	3.825E-22	4.733E-20	3.739E-19	4.232E-17	2.997E-16	1.541E-14	4.953E-14
Ra-226	U-238	4.219E-13	0.000E+00	5.049E-28	6.248E-26	4.936E-25	5.587E-23	3.956E-22	2.034E-20	6.537E-20
Ra-226	U-238	6.073E-15	0.000E+00	7.267E-30	8.993E-28	7.105E-27	8.042E-25	5.695E-24	2.928E-22	9.410E-22
Ra-226	U-238	1.994E-04	0.000E+00	2.387E-19	2.954E-17	2.333E-16	2.641E-14	1.870E-13	9.616E-12	3.090E-11
Ra-226	U-238	2.633E-10	0.000E+00	3.150E-25	3.899E-23	3.080E-22	3.486E-20	2.469E-19	1.269E-17	4.079E-17
Ra-226	U-238	3.789E-12	0.000E+00	4.535E-27	5.612E-25	4.434E-24	5.018E-22	3.554E-21	1.827E-19	5.872E-19
Ra-226	∑S(j):		1.298E-04	1.298E-04	1.295E-04	1.291E-04	1.260E-04	1.223E-04	9.643E-05	7.161E-05
Ra-226	Ra-226	3.795E-12	2.467E-12	2.466E-12	2.460E-12	2.452E-12	2.395E-12	2.324E-12	1.832E-12	1.361E-12
Ra-226	Ra-226	4.196E-08	2.727E-08	2.726E-08	2.719E-08	2.711E-08	2.647E-08	2.570E-08	2.025E-08	1.504E-08
Ra-226	∑S(j):		2.728E-08	2.726E-08	2.719E-08	2.711E-08	2.648E-08	2.570E-08	2.026E-08	1.504E-08
Ra-226	Ra-226	5.538E-14	3.600E-14	3.598E-14	3.589E-14	3.579E-14	3.494E-14	3.392E-14	2.674E-14	1.986E-14
Ra-226	Ra-226	7.972E-16	5.182E-16	5.179E-16	5.166E-16	5.151E-16	5.030E-16	4.882E-16	3.848E-16	2.858E-16
Ra-226	∑S(j):		3.652E-14	3.650E-14	3.641E-14	3.630E-14	3.545E-14	3.441E-14	2.712E-14	2.014E-14
Ra-226	Ra-226	2.000E-07	1.300E-07	1.299E-07	1.296E-07	1.292E-07	1.262E-07	1.225E-07	9.655E-08	7.170E-08
Ra-226	Ra-226	2.640E-13	1.716E-13	1.715E-13	1.711E-13	1.706E-13	1.666E-13	1.617E-13	1.274E-13	9.464E-14
Ra-226	U-238	3.200E-10	0.000E+00	3.829E-25	4.739E-23	3.744E-22	4.238E-20	3.001E-19	1.543E-17	4.959E-17
Ra-226	U-238	4.224E-16	0.000E+00	5.055E-31	6.255E-29	4.942E-28	5.594E-26	3.961E-25	2.037E-23	6.545E-23
Ra-226	U-238	6.080E-18	0.000E+00	7.276E-33	9.004E-31	7.114E-30	8.051E-28	5.702E-27	2.931E-25	9.421E-25
Ra-226	U-238	1.997E-07	0.000E+00	2.390E-22	2.957E-20	2.336E-19	2.644E-17	1.873E-16	9.627E-15	3.094E-14
Ra-226	U-238	2.636E-13	0.000E+00	3.154E-28	3.903E-26	3.084E-25	3.490E-23	2.472E-22	1.271E-20	4.084E-20
Ra-226	U-238	3.794E-15	0.000E+00	4.540E-30	5.619E-28	4.439E-27	5.024E-25	3.558E-24	1.829E-22	5.879E-22
Ra-226	∑S(j):		1.300E-07	1.299E-07	1.296E-07	1.292E-07	1.262E-07	1.225E-07	9.655E-08	7.170E-08
Ra-226	Ra-226	3.800E-15	2.470E-15	2.469E-15	2.463E-15	2.455E-15	2.398E-15	2.327E-15	1.834E-15	1.362E-15

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	3.300E-01	3.140E-01	2.572E-01	2.005E-01	2.734E-02	2.265E-03	5.030E-12	7.667E-23
U-238	U-238	5.450E-07	3.488E-07	3.472E-07	3.407E-07	3.327E-07	2.755E-07	2.175E-07	3.292E-08	3.107E-09
U-238	U-238	1.599E-03	1.024E-03	1.019E-03	9.997E-04	9.764E-04	8.084E-04	6.384E-04	9.661E-05	9.119E-06
U-238	∑S(j):		1.024E-03	1.019E-03	1.000E-03	9.767E-04	8.086E-04	6.386E-04	9.664E-05	9.122E-06
U-234	U-238	1.599E-03	0.000E+00	2.876E-09	1.411E-08	2.757E-08	1.141E-07	1.802E-07	1.363E-07	2.571E-08
U-234	U-238	3.039E-11	0.000E+00	5.465E-17	2.681E-16	5.238E-16	2.168E-15	3.424E-15	2.590E-15	4.885E-16
U-234	U-238	3.359E-07	0.000E+00	6.042E-13	2.964E-12	5.790E-12	2.397E-11	3.786E-11	2.863E-11	5.400E-12
U-234	U-238	4.434E-13	0.000E+00	7.975E-19	3.913E-18	7.643E-18	3.164E-17	4.997E-17	3.779E-17	7.128E-18
U-234	U-238	6.383E-15	0.000E+00	1.148E-20	5.632E-20	1.100E-19	4.554E-19	7.192E-19	5.439E-19	1.026E-19
U-234	U-238	3.196E-07	0.000E+00	5.748E-13	2.820E-12	5.509E-12	2.280E-11	3.602E-11	2.724E-11	5.138E-12
U-234	U-238	4.219E-13	0.000E+00	7.588E-19	3.723E-18	7.272E-18	3.010E-17	4.754E-17	3.595E-17	6.782E-18
U-234	U-238	6.073E-15	0.000E+00	1.092E-20	5.359E-20	1.047E-19	4.333E-19	6.843E-19	5.175E-19	9.762E-20
U-234	U-238	6.713E-11	0.000E+00	1.207E-16	5.924E-16	1.157E-15	4.790E-15	7.565E-15	5.721E-15	1.079E-15
U-234	U-238	8.862E-17	0.000E+00	1.594E-22	7.819E-22	1.527E-21	6.323E-21	9.986E-21	7.551E-21	1.424E-21
U-234	U-238	1.276E-18	0.000E+00	2.294E-24	1.126E-23	2.199E-23	9.101E-23	1.437E-22	1.087E-22	2.050E-23
U-234	U-238	3.200E-10	0.000E+00	5.755E-16	2.824E-15	5.516E-15	2.283E-14	3.606E-14	2.727E-14	5.144E-15
U-234	U-238	4.224E-16	0.000E+00	7.597E-22	3.727E-21	7.281E-21	3.014E-20	4.760E-20	3.600E-20	6.790E-21
U-234	U-238	6.080E-18	0.000E+00	1.093E-23	5.365E-23	1.048E-22	4.338E-22	6.851E-22	5.181E-22	9.774E-23
U-234	U-238	9.980E-01	0.000E+00	1.795E-06	8.806E-06	1.720E-05	7.120E-05	1.125E-04	8.505E-05	1.604E-05
U-234	U-238	1.317E-06	0.000E+00	2.369E-12	1.162E-11	2.271E-11	9.399E-11	1.484E-10	1.123E-10	2.118E-11
U-234	U-238	1.896E-08	0.000E+00	3.410E-14	1.673E-13	3.268E-13	1.353E-12	2.137E-12	1.616E-12	3.048E-13
U-234	U-238	2.096E-04	0.000E+00	3.770E-10	1.850E-09	3.613E-09	1.496E-08	2.362E-08	1.786E-08	3.370E-09
U-234	U-238	2.767E-10	0.000E+00	4.976E-16	2.442E-15	4.769E-15	1.974E-14	3.118E-14	2.358E-14	4.448E-15
U-234	U-238	3.983E-12	0.000E+00	7.163E-18	3.514E-17	6.865E-17	2.842E-16	4.488E-16	3.394E-16	6.402E-17
U-234	U-238	1.994E-04	0.000E+00	3.587E-10	1.760E-09	3.438E-09	1.423E-08	2.247E-08	1.700E-08	3.206E-09
U-234	U-238	2.633E-10	0.000E+00	4.735E-16	2.323E-15	4.538E-15	1.878E-14	2.967E-14	2.243E-14	4.232E-15
U-234	U-238	3.789E-12	0.000E+00	6.815E-18	3.344E-17	6.531E-17	2.704E-16	4.270E-16	3.229E-16	6.091E-17
U-234	U-238	4.189E-08	0.000E+00	7.534E-14	3.696E-13	7.220E-13	2.989E-12	4.721E-12	3.570E-12	6.734E-13
U-234	U-238	5.530E-14	0.000E+00	9.945E-20	4.879E-19	9.531E-19	3.945E-18	6.231E-18	4.712E-18	8.889E-19
U-234	U-238	7.959E-16	0.000E+00	1.431E-21	7.023E-21	1.372E-20	5.679E-20	8.969E-20	6.783E-20	1.279E-20
U-234	U-238	1.997E-07	0.000E+00	3.591E-13	1.762E-12	3.442E-12	1.425E-11	2.250E-11	1.702E-11	3.210E-12
U-234	U-238	2.636E-13	0.000E+00	4.740E-19	2.326E-18	4.543E-18	1.881E-17	2.970E-17	2.246E-17	4.237E-18
U-234	U-238	3.794E-15	0.000E+00	6.823E-21	3.348E-20	6.539E-20	2.707E-19	4.275E-19	3.233E-19	6.099E-20
U-234	∑S(j):		0.000E+00	1.798E-06	8.824E-06	1.724E-05	7.135E-05	1.127E-04	8.522E-05	1.608E-05
Th-230	U-238	1.599E-03	0.000E+00	1.325E-14	3.270E-13	1.288E-12	2.842E-11	9.756E-11	8.119E-10	1.124E-09
Th-230	U-238	3.039E-11	0.000E+00	2.517E-22	6.213E-21	2.446E-20	5.400E-19	1.854E-18	1.543E-17	2.135E-17
Th-230	U-238	3.359E-07	0.000E+00	2.782E-18	6.868E-17	2.704E-16	5.969E-15	2.049E-14	1.705E-13	2.360E-13
Th-230	U-238	4.434E-13	0.000E+00	3.672E-24	9.066E-23	3.570E-22	7.880E-21	2.705E-20	2.251E-19	3.116E-19
Th-230	U-238	6.383E-15	0.000E+00	5.286E-26	1.305E-24	5.139E-24	1.134E-22	3.894E-22	3.240E-21	4.485E-21
Th-230	U-238	3.196E-07	0.000E+00	2.647E-18	6.535E-17	2.573E-16	5.679E-15	1.950E-14	1.622E-13	2.246E-13
Th-230	U-238	4.219E-13	0.000E+00	3.494E-24	8.626E-23	3.396E-22	7.497E-21	2.574E-20	2.142E-19	2.964E-19
Th-230	U-238	6.073E-15	0.000E+00	5.029E-26	1.242E-24	4.889E-24	1.079E-22	3.705E-22	3.083E-21	4.267E-21
Th-230	U-238	6.713E-11	0.000E+00	5.560E-22	1.373E-20	5.405E-20	1.193E-18	4.095E-18	3.408E-17	4.717E-17
Th-230	U-238	8.862E-17	0.000E+00	7.339E-28	1.812E-26	7.134E-26	1.575E-24	5.406E-24	4.499E-23	6.226E-23
Th-230	U-238	1.276E-18	0.000E+00	1.056E-29	2.608E-28	1.027E-27	2.267E-26	7.781E-26	6.475E-25	8.962E-25
Th-230	U-238	3.200E-10	0.000E+00	2.650E-21	6.543E-20	2.576E-19	5.686E-18	1.952E-17	1.624E-16	2.248E-16

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	0.000E+00	3.498E-27	8.636E-26	3.401E-25	7.506E-24	2.577E-23	2.144E-22	2.968E-22
Th-230	U-238	6.080E-18	0.000E+00	5.035E-29	1.243E-27	4.895E-27	1.080E-25	3.709E-25	3.086E-24	4.272E-24
Th-230	U-238	9.980E-01	0.000E+00	8.265E-12	2.040E-10	8.034E-10	1.773E-08	6.088E-08	5.066E-07	7.012E-07
Th-230	U-238	1.317E-06	0.000E+00	1.091E-17	2.693E-16	1.061E-15	2.341E-14	8.036E-14	6.687E-13	9.256E-13
Th-230	U-238	1.896E-08	0.000E+00	1.570E-19	3.877E-18	1.527E-17	3.369E-16	1.157E-15	9.626E-15	1.332E-14
Th-230	U-238	2.096E-04	0.000E+00	1.736E-15	4.286E-14	1.688E-13	3.725E-12	1.279E-11	1.064E-10	1.473E-10
Th-230	U-238	2.767E-10	0.000E+00	2.292E-21	5.657E-20	2.228E-19	4.917E-18	1.688E-17	1.405E-16	1.944E-16
Th-230	U-238	3.983E-12	0.000E+00	3.298E-23	8.143E-22	3.206E-21	7.077E-20	2.430E-19	2.022E-18	2.798E-18
Th-230	U-238	1.994E-04	0.000E+00	1.652E-15	4.078E-14	1.606E-13	3.544E-12	1.217E-11	1.012E-10	1.401E-10
Th-230	U-238	2.633E-10	0.000E+00	2.180E-21	5.382E-20	2.119E-19	4.678E-18	1.606E-17	1.336E-16	1.850E-16
Th-230	U-238	3.789E-12	0.000E+00	3.138E-23	7.747E-22	3.051E-21	6.733E-20	2.312E-19	1.924E-18	2.662E-18
Th-230	U-238	4.189E-08	0.000E+00	3.469E-19	8.565E-18	3.372E-17	7.444E-16	2.555E-15	2.127E-14	2.943E-14
Th-230	U-238	5.530E-14	0.000E+00	4.579E-25	1.131E-23	4.452E-23	9.826E-22	3.373E-21	2.807E-20	3.885E-20
Th-230	U-238	7.959E-16	0.000E+00	6.592E-27	1.627E-25	6.408E-25	1.414E-23	4.855E-23	4.040E-22	5.592E-22
Th-230	U-238	1.997E-07	0.000E+00	1.654E-18	4.083E-17	1.608E-16	3.548E-15	1.218E-14	1.014E-13	1.403E-13
Th-230	U-238	2.636E-13	0.000E+00	2.183E-24	5.389E-23	2.122E-22	4.684E-21	1.608E-20	1.338E-19	1.852E-19
Th-230	U-238	3.794E-15	0.000E+00	3.142E-26	7.757E-25	3.054E-24	6.742E-23	2.314E-22	1.926E-21	2.666E-21
Th-230	∑S(j):		0.000E+00	8.282E-12	2.045E-10	8.051E-10	1.777E-08	6.100E-08	5.076E-07	7.026E-07
U-238	U-238	2.111E-09	1.351E-09	1.345E-09	1.320E-09	1.289E-09	1.067E-09	8.427E-10	1.275E-10	1.204E-11
U-238	U-238	3.039E-11	1.945E-11	1.936E-11	1.899E-11	1.855E-11	1.536E-11	1.213E-11	1.836E-12	1.733E-13
U-238	∑S(j):		1.371E-09	1.364E-09	1.339E-09	1.307E-09	1.082E-09	8.548E-10	1.294E-10	1.221E-11
U-234	U-238	2.111E-09	0.000E+00	3.797E-15	1.863E-14	3.639E-14	1.506E-13	2.379E-13	1.799E-13	3.394E-14
Th-230	U-238	2.111E-09	0.000E+00	1.748E-20	4.316E-19	1.700E-18	3.751E-17	1.288E-16	1.072E-15	1.483E-15
U-238	U-238	3.359E-07	2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
U-238	U-238	4.434E-13	2.838E-13	2.825E-13	2.772E-13	2.707E-13	2.241E-13	1.770E-13	2.679E-14	2.528E-15
U-238	∑S(j):		2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
Ra-226	U-238	3.359E-07	0.000E+00	4.020E-22	4.975E-20	3.930E-19	4.449E-17	3.150E-16	1.620E-14	5.206E-14
Ra-226	U-238	4.434E-13	0.000E+00	5.307E-28	6.567E-26	5.188E-25	5.872E-23	4.158E-22	2.138E-20	6.871E-20
Ra-226	U-238	6.383E-15	0.000E+00	7.638E-30	9.452E-28	7.468E-27	8.452E-25	5.986E-24	3.077E-22	9.891E-22
Ra-226	U-238	2.096E-04	0.000E+00	2.509E-19	3.104E-17	2.453E-16	2.776E-14	1.966E-13	1.011E-11	3.248E-11
Ra-226	U-238	2.767E-10	0.000E+00	3.311E-25	4.098E-23	3.237E-22	3.664E-20	2.595E-19	1.334E-17	4.288E-17
Ra-226	U-238	3.983E-12	0.000E+00	4.766E-27	5.898E-25	4.660E-24	5.274E-22	3.735E-21	1.920E-19	6.172E-19
Ra-226	∑S(j):		0.000E+00	2.513E-19	3.109E-17	2.457E-16	2.780E-14	1.969E-13	1.012E-11	3.253E-11
U-238	U-238	6.383E-15	4.085E-15	4.066E-15	3.990E-15	3.897E-15	3.226E-15	2.548E-15	3.856E-16	3.639E-17
U-238	U-238	3.196E-07	2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	∑S(j):		2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	U-238	4.219E-13	2.700E-13	2.687E-13	2.637E-13	2.576E-13	2.132E-13	1.684E-13	2.548E-14	2.405E-15
U-238	U-238	6.073E-15	3.886E-15	3.868E-15	3.796E-15	3.707E-15	3.069E-15	2.424E-15	3.668E-16	3.462E-17
U-238	∑S(j):		2.739E-13	2.726E-13	2.675E-13	2.613E-13	2.163E-13	1.708E-13	2.585E-14	2.440E-15
U-238	U-238	6.713E-11	4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13
U-238	U-238	8.862E-17	5.671E-17	5.645E-17	5.539E-17	5.410E-17	4.479E-17	3.537E-17	5.353E-18	5.052E-19
U-238	∑S(j):		4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13

Summary : Perim Soil Add.3-Resident-No Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-RES-NO-BKD SUB-B.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	0.000E+00	8.034E-26	9.942E-24	7.855E-23	8.890E-21	6.296E-20	3.237E-18	1.040E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.060E-31	1.312E-29	1.037E-28	1.173E-26	8.310E-26	4.272E-24	1.373E-23
Ra-226	U-238	1.276E-18	0.000E+00	1.526E-33	1.889E-31	1.492E-30	1.689E-28	1.196E-27	6.150E-26	1.977E-25
Ra-226	U-238	4.189E-08	0.000E+00	5.013E-23	6.204E-21	4.901E-20	5.547E-18	3.928E-17	2.020E-15	6.491E-15
Ra-226	U-238	5.530E-14	0.000E+00	6.617E-29	8.189E-27	6.470E-26	7.322E-24	5.186E-23	2.666E-21	8.569E-21
Ra-226	U-238	7.959E-16	0.000E+00	9.525E-31	1.179E-28	9.312E-28	1.054E-25	7.464E-25	3.837E-23	1.233E-22
Ra-226	∑S(j):		0.000E+00	5.021E-23	6.214E-21	4.909E-20	5.556E-18	3.935E-17	2.023E-15	6.502E-15
U-238	U-238	1.276E-18	8.163E-19	8.125E-19	7.973E-19	7.787E-19	6.447E-19	5.092E-19	7.705E-20	7.272E-21
U-238	U-238	3.200E-10	2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	∑S(j):		2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	U-238	4.224E-16	2.703E-16	2.691E-16	2.640E-16	2.579E-16	2.135E-16	1.686E-16	2.552E-17	2.408E-18
U-238	U-238	6.080E-18	3.891E-18	3.873E-18	3.800E-18	3.712E-18	3.073E-18	2.427E-18	3.673E-19	3.467E-20
U-238	∑S(j):		2.742E-16	2.729E-16	2.678E-16	2.616E-16	2.166E-16	1.710E-16	2.588E-17	2.443E-18
U-238	U-238	9.980E-01	6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.317E-06	8.431E-07	8.391E-07	8.234E-07	8.042E-07	6.658E-07	5.258E-07	7.958E-08	7.511E-09
U-238	∑S(j):		6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.896E-08	1.214E-08	1.208E-08	1.185E-08	1.158E-08	9.584E-09	7.569E-09	1.145E-09	1.081E-10
U-238	U-238	2.096E-04	1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	∑S(j):		1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	U-238	2.767E-10	1.771E-10	1.763E-10	1.730E-10	1.689E-10	1.399E-10	1.105E-10	1.671E-11	1.578E-12
U-238	U-238	3.983E-12	2.549E-12	2.537E-12	2.490E-12	2.431E-12	2.013E-12	1.590E-12	2.406E-13	2.271E-14
U-238	∑S(j):		1.796E-10	1.788E-10	1.754E-10	1.714E-10	1.419E-10	1.120E-10	1.696E-11	1.600E-12
U-238	U-238	1.994E-04	1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	2.633E-10	1.685E-10	1.677E-10	1.646E-10	1.607E-10	1.331E-10	1.051E-10	1.590E-11	1.501E-12
U-238	∑S(j):		1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	3.789E-12	2.425E-12	2.414E-12	2.369E-12	2.313E-12	1.915E-12	1.513E-12	2.289E-13	2.161E-14
U-238	U-238	4.189E-08	2.681E-08	2.668E-08	2.618E-08	2.557E-08	2.117E-08	1.672E-08	2.530E-09	2.388E-10
U-238	∑S(j):		2.681E-08	2.669E-08	2.619E-08	2.558E-08	2.118E-08	1.672E-08	2.531E-09	2.389E-10
U-238	U-238	5.530E-14	3.539E-14	3.522E-14	3.456E-14	3.376E-14	2.795E-14	2.207E-14	3.340E-15	3.153E-16
U-238	U-238	7.959E-16	5.094E-16	5.070E-16	4.975E-16	4.859E-16	4.023E-16	3.177E-16	4.808E-17	4.538E-18
U-238	∑S(j):		3.590E-14	3.573E-14	3.506E-14	3.424E-14	2.835E-14	2.239E-14	3.388E-15	3.198E-16
U-238	U-238	1.997E-07	1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	2.636E-13	1.687E-13	1.679E-13	1.648E-13	1.609E-13	1.332E-13	1.052E-13	1.592E-14	1.503E-15
U-238	∑S(j):		1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	3.794E-15	2.428E-15	2.417E-15	2.371E-15	2.316E-15	1.918E-15	1.514E-15	2.292E-16	2.163E-17

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

RESCALC.EXE execution time = 399.95 seconds
Total water/soil iteration failures = 4.800E+01.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Table of Contents

Part I: Mixture Sums and Single Radionuclide Guidelines

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Dose Conversion Factor (and Related) Parameter Summary

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	At-218 (Source: DCFPAK3.02)	5.567E-05	5.567E-05	DCF1(1)
A-1	Ba-137m (Source: DCFPAK3.02)	3.381E+00	3.381E+00	DCF1(2)
A-1	Bi-210 (Source: DCFPAK3.02)	5.473E-03	5.474E-03	DCF1(3)
A-1	Bi-214 (Source: DCFPAK3.02)	9.135E+00	9.136E+00	DCF1(4)
A-1	Cs-137 (Source: DCFPAK3.02)	8.686E-04	8.687E-04	DCF1(5)
A-1	Hg-206 (Source: DCFPAK3.02)	6.127E-01	6.128E-01	DCF1(6)
A-1	Pa-234 (Source: DCFPAK3.02)	8.275E+00	8.276E+00	DCF1(7)
A-1	Pa-234m (Source: DCFPAK3.02)	1.257E-01	1.257E-01	DCF1(8)
A-1	Pb-210 (Source: DCFPAK3.02)	2.092E-03	2.092E-03	DCF1(9)
A-1	Pb-214 (Source: DCFPAK3.02)	1.257E+00	1.257E+00	DCF1(10)
A-1	Po-210 (Source: DCFPAK3.02)	5.641E-05	5.642E-05	DCF1(11)
A-1	Po-214 (Source: DCFPAK3.02)	4.801E-04	4.801E-04	DCF1(12)
A-1	Po-218 (Source: DCFPAK3.02)	9.228E-09	9.229E-09	DCF1(13)
A-1	Ra-226 (Source: DCFPAK3.02)	3.176E-02	3.176E-02	DCF1(14)
A-1	Rn-218 (Source: DCFPAK3.02)	4.259E-03	4.260E-03	DCF1(15)
A-1	Rn-222 (Source: DCFPAK3.02)	2.130E-03	2.130E-03	DCF1(16)
A-1	Sr-90 (Source: DCFPAK3.02)	6.463E-04	6.464E-04	DCF1(17)
A-1	Th-230 (Source: DCFPAK3.02)	1.106E-03	1.106E-03	DCF1(18)
A-1	Th-234 (Source: DCFPAK3.02)	2.316E-02	2.317E-02	DCF1(19)
A-1	Tl-206 (Source: DCFPAK3.02)	1.278E-02	1.278E-02	DCF1(20)
A-1	Tl-210 (Source: DCFPAK3.02)	1.677E+01	1.678E+01	DCF1(21)
A-1	U-234 (Source: DCFPAK3.02)	3.456E-04	3.456E-04	DCF1(22)
A-1	U-238 (Source: DCFPAK3.02)	1.713E-04	1.713E-04	DCF1(23)
A-1	Y-90 (Source: DCFPAK3.02)	4.016E-02	4.017E-02	DCF1(24)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Cs-137+D	1.460E-04	1.457E-04	DCF2(1)
B-1	Pb-210+D	3.709E-02	2.077E-02	DCF2(2)
B-1	Pb-210+D1	2.129E-02	2.077E-02	DCF2(3)
B-1	Pb-210+D2	2.080E-02	2.077E-02	DCF2(4)
B-1	Ra-226+D	3.531E-02	3.517E-02	DCF2(5)
B-1	Ra-226+D1	3.531E-02	3.517E-02	DCF2(8)
B-1	Ra-226+D2	3.526E-02	3.517E-02	DCF2(11)
B-1	Ra-226+D3	3.526E-02	3.517E-02	DCF2(14)
B-1	Ra-226+D4	3.520E-02	3.517E-02	DCF2(17)
B-1	Sr-90+D	5.845E-04	5.786E-04	DCF2(20)
B-1	Th-230	3.760E-01	3.759E-01	DCF2(21)
B-1	U-234	3.480E-02	3.479E-02	DCF2(36)
B-1	U-238	2.970E-02	2.973E-02	DCF2(51)
B-1	U-238+D	2.973E-02	2.973E-02	DCF2(52)
B-1	U-238+D1	2.973E-02	2.973E-02	DCF2(67)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Cs-137+D	5.030E-05	5.032E-05	DCF3(1)
D-1	Pb-210+D	7.065E-03	2.575E-03	DCF3(2)
D-1	Pb-210+D1	2.585E-03	2.575E-03	DCF3(3)
D-1	Pb-210+D2	2.580E-03	2.575E-03	DCF3(4)
D-1	Ra-226+D	1.041E-03	1.036E-03	DCF3(5)
D-1	Ra-226+D1	1.041E-03	1.036E-03	DCF3(8)

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	Ra-226+D2	1.040E-03	1.036E-03	DCF3(11)
D-1	Ra-226+D3	1.040E-03	1.036E-03	DCF3(14)
D-1	Ra-226+D4	1.040E-03	1.036E-03	DCF3(17)
D-1	Sr-90+D	1.119E-04	1.021E-04	DCF3(20)
D-1	Th-230	7.920E-04	7.918E-04	DCF3(21)
D-1	U-234	1.830E-04	1.831E-04	DCF3(36)
D-1	U-238	1.650E-04	1.650E-04	DCF3(51)
D-1	U-238+D	1.790E-04	1.650E-04	DCF3(52)
D-1	U-238+D1	1.775E-04	1.650E-04	DCF3(67)
D-34	Food transfer factors:			
D-34	Cs-137+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(1,1)
D-34	Cs-137+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.000E-02	3.000E-02	RTF(1,2)
D-34	Cs-137+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	8.000E-03	8.000E-03	RTF(1,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(2,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(2,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(2,3)
D-34				
D-34	Pb-210+D1 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(3,1)
D-34	Pb-210+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(3,2)
D-34	Pb-210+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(3,3)
D-34				
D-34	Pb-210+D2 , plant/soil concentration ratio, dimensionless	1.000E-02	1.000E-02	RTF(4,1)
D-34	Pb-210+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(4,2)
D-34	Pb-210+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	3.000E-04	3.000E-04	RTF(4,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(5,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(5,3)
D-34				
D-34	Ra-226+D1 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(8,1)
D-34	Ra-226+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,2)
D-34	Ra-226+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(8,3)
D-34				
D-34	Ra-226+D2 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(11,1)
D-34	Ra-226+D2 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,2)
D-34	Ra-226+D2 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Ra-226+D3 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(14,1)
D-34	Ra-226+D3 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,2)
D-34	Ra-226+D3 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(14,3)
D-34				
D-34	Ra-226+D4 , plant/soil concentration ratio, dimensionless	4.000E-02	4.000E-02	RTF(17,1)
D-34	Ra-226+D4 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(17,2)
D-34	Ra-226+D4 , 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(20,1)
D-34	Sr-90+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-03	8.000E-03	RTF(20,2)
D-34	Sr-90+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-03	2.000E-03	RTF(20,3)

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract
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Dose Conversion Factor (and Related) Parameter Summary (continued)
Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-230 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(21,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(21,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.000E-06	5.000E-06	RTF(21,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(36,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(36,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(36,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(51,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(51,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(51,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(52,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(52,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(52,3)
D-34				
D-34	U-238+D1 , plant/soil concentration ratio, dimensionless	2.500E-03	2.500E-03	RTF(67,1)
D-34	U-238+D1 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	3.400E-04	3.400E-04	RTF(67,2)
D-34	U-238+D1 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(67,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Cs-137+D , fish	2.000E+03	2.000E+03	BIOFAC(1,1)
D-5	Cs-137+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(1,2)
D-5				
D-5	Pb-210+D , fish	3.000E+02	3.000E+02	BIOFAC(2,1)
D-5	Pb-210+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(2,2)
D-5				
D-5	Pb-210+D1 , fish	3.000E+02	3.000E+02	BIOFAC(3,1)
D-5	Pb-210+D1 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(3,2)
D-5				
D-5	Pb-210+D2 , fish	3.000E+02	3.000E+02	BIOFAC(4,1)
D-5	Pb-210+D2 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(4,2)
D-5				
D-5	Ra-226+D , fish	5.000E+01	5.000E+01	BIOFAC(5,1)
D-5	Ra-226+D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(5,2)
D-5				
D-5	Ra-226+D1 , fish	5.000E+01	5.000E+01	BIOFAC(8,1)
D-5	Ra-226+D1 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(8,2)
D-5				
D-5	Ra-226+D2 , fish	5.000E+01	5.000E+01	BIOFAC(11,1)
D-5	Ra-226+D2 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(11,2)
D-5				
D-5	Ra-226+D3 , fish	5.000E+01	5.000E+01	BIOFAC(14,1)
D-5	Ra-226+D3 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(14,2)
D-5				
D-5	Ra-226+D4 , fish	5.000E+01	5.000E+01	BIOFAC(17,1)
D-5	Ra-226+D4 , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(17,2)
D-5				

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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

Dose Library: DCFPAK3.02 (Adult)

Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-5	Sr-90+D , fish	6.000E+01	6.000E+01	BIOFAC(20,1)
D-5	Sr-90+D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(20,2)
D-5				
D-5	Th-230 , fish	1.000E+02	1.000E+02	BIOFAC(21,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(21,2)
D-5				
D-5	U-234 , fish	1.000E+01	1.000E+01	BIOFAC(36,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(36,2)
D-5				
D-5	U-238 , fish	1.000E+01	1.000E+01	BIOFAC(51,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(51,2)
D-5				
D-5	U-238+D , fish	1.000E+01	1.000E+01	BIOFAC(52,1)
D-5	U-238+D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(52,2)
D-5				
D-5	U-238+D1 , fish	1.000E+01	1.000E+01	BIOFAC(67,1)
D-5	U-238+D1 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(67,2)
D-5				

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

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

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Site-Specific Parameter Summary

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R011	Area of contaminated zone (m**2)	1.400E+04	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	5.000E+00	2.000E+00	---	THICK0
R011	Fraction of contamination that is submerged	0.000E+00	0.000E+00	---	SUBMFRACT
R011	Length parallel to aquifer flow (m)	2.500E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	1.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	5.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	5.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	5.000E+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): Cs-137	1.330E+00	0.000E+00	---	S1(1)
R012	Initial principal radionuclide (pCi/g): Ra-226	6.500E-01	0.000E+00	---	S1(5)
R012	Initial principal radionuclide (pCi/g): Sr-90	3.300E-01	0.000E+00	---	S1(20)
R012	Initial principal radionuclide (pCi/g): U-238	6.400E-01	0.000E+00	---	S1(51)
R012	Concentration in groundwater (pCi/L): Cs-137	not used	0.000E+00	---	W1(1)
R012	Concentration in groundwater (pCi/L): Ra-226	not used	0.000E+00	---	W1(5)
R012	Concentration in groundwater (pCi/L): Sr-90	not used	0.000E+00	---	W1(20)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(51)
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)	1.660E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	1.000E-03	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	3.300E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	2.400E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	4.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	6.230E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	4.600E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.230E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	2.600E-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	Romberg failures occurred	EPS
R014	Density of saturated zone (g/cm**3)	1.660E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	3.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	2.400E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	2.000E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.000E+04	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	4.800E-03	2.000E-02	---	HGWT

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R014	Saturated zone b parameter	4.900E+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)	1.800E+01	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	2.500E+02	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	0.000E+00	4.000E+00	---	H(1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.660E+00	1.500E+00	---	DENSUZ(1)
R015	Unsat. zone 1, total porosity	3.300E-01	4.000E-01	---	TPUZ(1)
R015	Unsat. zone 1, effective porosity	2.400E-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	4.900E+00	5.300E+00	---	BUZ(1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	5.000E+03	1.000E+01	---	HCUZ(1)
R016	Distribution coefficients for Cs-137				
R016	Contaminated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCC(1)
R016	Unsaturated zone 1 (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCU(1,1)
R016	Saturated zone (cm**3/g)	2.800E+02	4.600E+03	---	DCNUCS(1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.889E-04	ALEACH(1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(1)
R016	Distribution coefficients for Ra-226				
R016	Contaminated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCC(5)
R016	Unsaturated zone 1 (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCU(5,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS(5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.618E-04	ALEACH(5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(5)
R016	Distribution coefficients for Sr-90				
R016	Contaminated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCC(20)
R016	Unsaturated zone 1 (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCU(20,1)
R016	Saturated zone (cm**3/g)	3.000E+00	3.000E+01	---	DCNUCS(20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.574E-02	ALEACH(20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(20)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(51)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(51,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(51)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(51)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(51)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCC(2)
R016	Unsaturated zone 1 (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCU(2,1)
R016	Saturated zone (cm**3/g)	1.000E+02	1.000E+02	---	DCNUCS(2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	8.082E-04	ALEACH(2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(2)

Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCC(21)
R016	Unsaturated zone 1 (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCU(21,1)
R016	Saturated zone (cm**3/g)	6.000E+04	6.000E+04	---	DCNUCS(21)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.349E-06	ALEACH(21)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(21)
R016	Distribution coefficients for daughter U-234				
R016	Contaminated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCC(36)
R016	Unsaturated zone 1 (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCU(36,1)
R016	Saturated zone (cm**3/g)	1.700E+01	5.000E+01	---	DCNUCS(36)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.721E-03	ALEACH(36)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK(36)
R017	Inhalation rate (m**3/yr)	7.300E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	1.000E-04	1.000E-04	---	MLINH
R017	Exposure duration	2.500E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	4.000E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	8.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	1.700E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	6.000E-02	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE(1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE(2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE(3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE(4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE(5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE(6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE(7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE(8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE(9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
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)

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract
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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)	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)	3.500E+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	not used	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	not used	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	not used	5.000E-01	---	FR9
R018	Contamination fraction of plant food	not used	-1	---	FPLANT
R018	Contamination fraction of meat	not used	-1	---	FMEAT
R018	Contamination fraction of milk	not used	-1	---	FMILK
R019	Livestock fodder intake for meat (kg/day)	not used	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	not used	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	not used	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	not used	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	not used	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	not used	1.000E-04	---	MLFD
R019	Depth of soil mixing layer (m)	1.500E-01	1.500E-01	---	DM
R019	Depth of roots (m)	not used	9.000E-01	---	DROOT
R019	Drinking water fraction from ground water	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	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

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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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
STOR	Storage times of contaminated foodstuffs (days):				
STOR	Fruits, non-leafy vegetables, and grain	1.400E+01	1.400E+01	---	STOR_T(1)
STOR	Leafy vegetables	1.000E+00	1.000E+00	---	STOR_T(2)
STOR	Milk	1.000E+00	1.000E+00	---	STOR_T(3)
STOR	Meat and poultry	2.000E+01	2.000E+01	---	STOR_T(4)
STOR	Fish	7.000E+00	7.000E+00	---	STOR_T(5)
STOR	Crustacea and mollusks	7.000E+00	7.000E+00	---	STOR_T(6)
STOR	Well water	1.000E+00	1.000E+00	---	STOR_T(7)
STOR	Surface water	1.000E+00	1.000E+00	---	STOR_T(8)
STOR	Livestock fodder	4.500E+01	4.500E+01	---	STOR_T(9)
R021	Thickness of building foundation (m)	not used	1.500E-01	---	FLOOR1
R021	Bulk density of building foundation (g/cm**3)	not used	2.400E+00	---	DENSFL
R021	Total porosity of the cover material	not used	4.000E-01	---	TPCV
R021	Total porosity of the building foundation	not used	1.000E-01	---	TPFL
R021	Volumetric water content of the cover material	not used	5.000E-02	---	PH2OCV
R021	Volumetric water content of the foundation	not used	3.000E-02	---	PH2OFL
R021	Diffusion coefficient for radon gas (m/sec):				
R021	in cover material	not used	2.000E-06	---	DIFCV
R021	in foundation material	not used	3.000E-07	---	DIFFL
R021	in contaminated zone soil	not used	2.000E-06	---	DIFCZ
R021	Radon vertical dimension of mixing (m)	not used	2.000E+00	---	HMIX
R021	Average building air exchange rate (1/hr)	not used	5.000E-01	---	REXG
R021	Height of the building (room) (m)	not used	2.500E+00	---	HRM
R021	Building interior area factor	not used	0.000E+00	---	FAI
R021	Building depth below ground surface (m)	not used	-1.000E+00	---	DMFL
R021	Emanating power of Rn-222 gas	not used	2.500E-01	---	EMANA(1)
R021	Emanating power of Rn-220 gas	not used	1.500E-01	---	EMANA(2)
TITL	Number of graphical time points	32	---	---	NPTS
TITL	Maximum number of integration points for dose	17	---	---	LYMAX
TITL	Maximum number of integration points for risk	65	---	---	KYMAX

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Summary of Pathway Selections

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

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-NO BKD SUB-C.RAD

Contaminated Zone Dimensions		Initial Soil Concentrations, pCi/g	
Area:	14000.00 square meters	Cs-137	1.330E+00
Thickness:	5.00 meters	Ra-226	6.500E-01
Cover Depth:	0.00 meters	Sr-90	3.300E-01
		U-238	6.400E-01

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
TDOSE(t):	2.080E+00	2.103E+00	2.176E+00	2.216E+00	1.793E+00	1.584E+00	1.132E+00	8.637E-01
M(t):	1.387E-01	1.402E-01	1.450E-01	1.478E-01	1.195E-01	1.056E-01	7.546E-02	5.758E-02

Maximum TDOSE(t): 2.223E+00 mrem/yr at t = 9.36 ± 0.02 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 = 9.363E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio-Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	6.217E-01	0.2797	9.620E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.465E-04	0.0002
Ra-226	1.249E+00	0.5620	1.817E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.579E-02	0.0071
Sr-90	1.522E-03	0.0007	7.355E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.897E-04	0.0001
U-238	1.838E-02	0.0083	1.132E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.103E-04	0.0004
Total	1.891E+00	0.8506	2.966E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.734E-02	0.0078

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

As mrem/yr and Fraction of Total Dose At t = 9.363E+00 years

Water Dependent Pathways

Radio-Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Cs-137	3.593E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.222E-01	0.2799
Ra-226	5.177E-03	0.0023	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.270E+00	0.5715
Sr-90	2.702E-01	0.1216	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.719E-01	0.1224
U-238	3.891E-02	0.0175	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.832E-02	0.0262
Total	3.143E-01	0.1414	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.223E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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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.
Cs-137	7.730E-01	0.3716	1.196E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.551E-04	0.0003
Ra-226	1.256E+00	0.6037	1.453E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.274E-03	0.0030
Sr-90	2.427E-03	0.0012	1.173E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.025E-04	0.0001
U-238	1.921E-02	0.0092	1.183E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.514E-04	0.0005
Total	2.050E+00	0.9858	2.660E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.083E-03	0.0039

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 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.
Cs-137	2.233E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.735E-01	0.3719
Ra-226	2.253E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.262E+00	0.6068
Sr-90	1.918E-02	0.0092	0.000E+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-02	0.0105
U-238	2.007E-03	0.0010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.229E-02	0.0107
Total	2.121E-02	0.0102	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.080E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Total Dose 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.
Cs-137	7.552E-01	0.3591	1.169E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.424E-04	0.0003
Ra-226	1.255E+00	0.5967	1.498E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.435E-03	0.0035
Sr-90	2.309E-03	0.0011	1.116E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.878E-04	0.0001
U-238	1.912E-02	0.0091	1.177E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.470E-04	0.0005
Total	2.032E+00	0.9660	2.698E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.213E-03	0.0044

Total Dose 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.
Cs-137	6.602E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.558E-01	0.3593
Ra-226	1.503E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.263E+00	0.6004
Sr-90	5.585E-02	0.0266	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.845E-02	0.0278
U-238	6.026E-03	0.0029	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.621E-02	0.0125
Total	6.203E-02	0.0295	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.103E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+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.
Cs-137	6.881E-01	0.3163	1.065E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.942E-04	0.0002
Ra-226	1.252E+00	0.5756	1.662E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.172E-02	0.0054
Sr-90	1.892E-03	0.0009	9.141E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.358E-04	0.0001
U-238	1.877E-02	0.0086	1.155E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.293E-04	0.0004
Total	1.961E+00	0.9013	2.837E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.338E-02	0.0061

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 5.000E+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.
Cs-137	2.215E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.886E-01	0.3165
Ra-226	1.770E-03	0.0008	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.266E+00	0.5818
Sr-90	1.773E-01	0.0815	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.794E-01	0.0825
U-238	2.192E-02	0.0101	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.173E-02	0.0192
Total	2.010E-01	0.0924	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.176E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Total Dose 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.
Cs-137	6.125E-01	0.2764	9.478E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.399E-04	0.0002
Ra-226	1.249E+00	0.5633	1.838E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.634E-02	0.0074
Sr-90	1.475E-03	0.0007	7.126E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.838E-04	0.0001
U-238	1.833E-02	0.0083	1.128E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.076E-04	0.0004
Total	1.881E+00	0.8486	2.983E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.787E-02	0.0081

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 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.
Cs-137	3.770E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.130E-01	0.2766
Ra-226	5.790E-03	0.0026	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.271E+00	0.5734
Sr-90	2.702E-01	0.1219	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.719E-01	0.1227
U-238	4.137E-02	0.0187	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.071E-02	0.0274
Total	3.174E-01	0.1432	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.216E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	2.415E-01	0.1347	3.737E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.735E-04	0.0001
Ra-226	1.220E+00	0.6802	2.540E-04	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.507E-02	0.0196
Sr-90	2.011E-04	0.0001	9.715E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.506E-05	0.0000
U-238	1.517E-02	0.0085	9.343E-05	0.0001	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.515E-04	0.0004
Total	1.477E+00	0.8235	3.479E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.602E-02	0.0201

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

Water Dependent Pathways

Radio-	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.
Cs-137	7.201E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.418E-01	0.1348
Ra-226	6.195E-02	0.0345	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.317E+00	0.7345
Sr-90	3.679E-02	0.0205	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.702E-02	0.0206
U-238	1.813E-01	0.1011	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.973E-01	0.1101
Total	2.801E-01	0.1562	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.793E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Total Dose 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.
Cs-137	7.547E-02	0.0476	1.168E-07	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.420E-05	0.0000
Ra-226	1.184E+00	0.7475	2.693E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.989E-02	0.0252
Sr-90	1.666E-05	0.0000	8.050E-09	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.076E-06	0.0000
U-238	1.198E-02	0.0076	7.380E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.936E-04	0.0004
Total	1.272E+00	0.8027	3.432E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.054E-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-	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.
Cs-137	4.516E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.557E-02	0.0477
Ra-226	1.086E-01	0.0685	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.333E+00	0.8414
Sr-90	3.040E-03	0.0019	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.058E-03	0.0019
U-238	1.599E-01	0.1010	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.726E-01	0.1090
Total	2.716E-01	0.1715	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.584E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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

Water Independent Pathways (Inhalation excludes radon)

Radio-	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.
Cs-137	6.856E-06	0.0000	1.061E-11	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.924E-09	0.0000
Ra-226	9.333E-01	0.8245	2.170E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.264E-02	0.0288
Sr-90	3.699E-14	0.0000	1.787E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.610E-15	0.0000
U-238	1.814E-03	0.0016	1.118E-05	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.994E-05	0.0001
Total	9.351E-01	0.8261	2.282E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	3.273E-02	0.0289

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

Water Dependent Pathways

Radio-	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.
Cs-137	2.185E-08	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.883E-06	0.0000
Ra-226	1.402E-01	0.1239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.106E+00	0.9774
Sr-90	6.571E-12	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.612E-12	0.0000
U-238	2.366E-02	0.0209	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.557E-02	0.0226
Total	1.639E-01	0.1448	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.132E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Total Dose 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.
Cs-137	6.081E-11	0.0000	9.409E-17	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.367E-14	0.0000
Ra-226	6.931E-01	0.8025	1.611E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.424E-02	0.0281
Sr-90	5.639E-25	0.0000	2.724E-28	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.027E-26	0.0000
U-238	1.715E-04	0.0002	1.059E-06	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.515E-06	0.0000
Total	6.933E-01	0.8027	1.622E-04	0.0002	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.425E-02	0.0281

Total Dose 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.
Cs-137	4.216E-13	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.127E-11	0.0000
Ra-226	1.438E-01	0.1665	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.613E-01	0.9973
Sr-90	9.577E-23	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.641E-23	0.0000
U-238	2.149E-03	0.0025	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.330E-03	0.0027
Total	1.460E-01	0.1690	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	8.637E-01	1.0000

*Sum of all water independent and dependent pathways.

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract
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Dose/Source Ratios Summed Over All Pathways
Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137+D	Cs-137+D	1.000E+00	5.816E-01	5.682E-01	5.178E-01	4.609E-01	1.818E-01	5.682E-02	5.175E-06	4.607E-11
Ra-226+D	Ra-226+D	9.996E-01	1.939E+00	1.938E+00	1.934E+00	1.928E+00	1.883E+00	1.828E+00	1.442E+00	1.073E+00
Ra-226+D	Pb-210+D	9.996E-01	9.738E-04	3.008E-03	1.228E-02	2.577E-02	1.418E-01	2.211E-01	2.588E-01	2.517E-01
Ra-226+D	∑DSR(j)		1.940E+00	1.941E+00	1.946E+00	1.954E+00	2.025E+00	2.049E+00	1.701E+00	1.324E+00
Ra-226+D	Ra-226+D	1.319E-06	2.560E-06	2.559E-06	2.553E-06	2.545E-06	2.485E-06	2.413E-06	1.904E-06	1.416E-06
Ra-226+D	Pb-210+D1	1.319E-06	5.377E-10	1.652E-09	6.614E-09	1.366E-08	7.182E-08	1.107E-07	1.282E-07	1.239E-07
Ra-226+D	∑DSR(j)		2.561E-06	2.560E-06	2.559E-06	2.559E-06	2.557E-06	2.524E-06	2.032E-06	1.540E-06
Ra-226+D	Ra-226+D	1.899E-08	3.685E-08	3.683E-08	3.674E-08	3.663E-08	3.577E-08	3.473E-08	2.740E-08	2.038E-08
Ra-226+D	Pb-210+D2	1.899E-08	4.100E-11	1.221E-10	4.337E-10	7.941E-10	2.684E-09	3.521E-09	3.431E-09	2.961E-09
Ra-226+D	∑DSR(j)		3.689E-08	3.695E-08	3.717E-08	3.743E-08	3.846E-08	3.825E-08	3.083E-08	2.334E-08
Ra-226+D1	Ra-226+D1	2.100E-04	1.058E-03	1.057E-03	1.054E-03	1.051E-03	1.027E-03	9.966E-04	7.858E-04	5.839E-04
Ra-226+D1	Pb-210+D	2.100E-04	2.045E-07	6.318E-07	2.578E-06	5.413E-06	2.978E-05	4.645E-05	5.436E-05	5.286E-05
Ra-226+D1	∑DSR(j)		1.058E-03	1.058E-03	1.057E-03	1.057E-03	1.056E-03	1.043E-03	8.402E-04	6.368E-04
Ra-226+D1	Ra-226+D1	2.771E-10	1.396E-09	1.395E-09	1.392E-09	1.388E-09	1.355E-09	1.315E-09	1.037E-09	7.708E-10
Ra-226+D1	Pb-210+D1	2.771E-10	1.129E-13	3.470E-13	1.389E-12	2.868E-12	1.508E-11	2.325E-11	2.693E-11	2.603E-11
Ra-226+D1	∑DSR(j)		1.396E-09	1.396E-09	1.393E-09	1.391E-09	1.370E-09	1.339E-09	1.064E-09	7.968E-10
Ra-226+D1	Ra-226+D1	3.989E-12	2.009E-11	2.008E-11	2.003E-11	1.998E-11	1.951E-11	1.893E-11	1.493E-11	1.109E-11
Ra-226+D1	Pb-210+D2	3.989E-12	8.613E-15	2.566E-14	9.109E-14	1.668E-13	5.638E-13	7.396E-13	7.206E-13	6.219E-13
Ra-226+D1	∑DSR(j)		2.010E-11	2.011E-11	2.013E-11	2.014E-11	2.007E-11	1.967E-11	1.565E-11	1.172E-11
Ra-226+D2	Ra-226+D2	1.998E-04	3.407E-04	3.405E-04	3.397E-04	3.387E-04	3.307E-04	3.211E-04	2.534E-04	1.885E-04
Ra-226+D2	Pb-210+D	1.998E-04	1.946E-07	6.011E-07	2.453E-06	5.150E-06	2.833E-05	4.419E-05	5.172E-05	5.029E-05
Ra-226+D2	∑DSR(j)		3.409E-04	3.411E-04	3.421E-04	3.438E-04	3.591E-04	3.653E-04	3.051E-04	2.388E-04
Ra-226+D2	Ra-226+D2	2.637E-10	4.497E-10	4.494E-10	4.484E-10	4.470E-10	4.366E-10	4.238E-10	3.345E-10	2.488E-10
Ra-226+D2	Pb-210+D1	2.637E-10	1.074E-13	3.301E-13	1.322E-12	2.729E-12	1.435E-11	2.212E-11	2.562E-11	2.477E-11
Ra-226+D2	∑DSR(j)		4.498E-10	4.498E-10	4.497E-10	4.498E-10	4.509E-10	4.460E-10	3.601E-10	2.736E-10
Ra-226+D2	Ra-226+D2	3.795E-12	6.473E-12	6.469E-12	6.454E-12	6.435E-12	6.284E-12	6.101E-12	4.814E-12	3.581E-12
Ra-226+D2	Pb-210+D2	3.795E-12	8.194E-15	2.441E-14	8.667E-14	1.587E-13	5.364E-13	7.036E-13	6.856E-13	5.917E-13
Ra-226+D2	∑DSR(j)		6.481E-12	6.494E-12	6.541E-12	6.593E-12	6.821E-12	6.804E-12	5.500E-12	4.173E-12
Ra-226+D3	Ra-226+D3	4.196E-08	2.015E-07	2.014E-07	2.009E-07	2.003E-07	1.956E-07	1.899E-07	1.497E-07	1.113E-07
Ra-226+D3	Pb-210+D	4.196E-08	4.087E-11	1.263E-10	5.153E-10	1.082E-09	5.951E-09	9.282E-09	1.086E-08	1.056E-08
Ra-226+D3	∑DSR(j)		2.015E-07	2.015E-07	2.014E-07	2.014E-07	2.015E-07	1.992E-07	1.606E-07	1.218E-07
Ra-226+D3	Ra-226+D3	5.538E-14	2.660E-13	2.658E-13	2.652E-13	2.644E-13	2.582E-13	2.506E-13	1.976E-13	1.469E-13
Ra-226+D3	Pb-210+D1	5.538E-14	2.257E-17	6.934E-17	2.776E-16	5.732E-16	3.015E-15	4.647E-15	5.381E-15	5.202E-15
Ra-226+D3	∑DSR(j)		2.660E-13	2.659E-13	2.655E-13	2.650E-13	2.612E-13	2.553E-13	2.030E-13	1.521E-13

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226+D3	Ra-226+D3	7.972E-16	3.828E-15	3.826E-15	3.817E-15	3.806E-15	3.716E-15	3.608E-15	2.845E-15	2.114E-15
Ra-226+D3	Pb-210+D2	7.972E-16	1.721E-18	5.127E-18	1.820E-17	3.333E-17	1.127E-16	1.478E-16	1.440E-16	1.243E-16
Ra-226+D3	∑DSR(j)		3.830E-15	3.831E-15	3.835E-15	3.839E-15	3.829E-15	3.755E-15	2.989E-15	2.238E-15
Ra-226+D4	Ra-226+D4	2.000E-07	3.234E-09	3.233E-09	3.229E-09	3.224E-09	3.184E-09	3.134E-09	2.765E-09	2.363E-09
Ra-226+D4	Pb-210+D	2.000E-07	1.948E-10	6.018E-10	2.456E-09	5.156E-09	2.837E-08	4.424E-08	5.178E-08	5.035E-08
Ra-226+D4	∑DSR(j)		3.429E-09	3.835E-09	5.685E-09	8.380E-09	3.155E-08	4.738E-08	5.454E-08	5.272E-08
Ra-226+D4	Ra-226+D4	2.640E-13	4.269E-15	4.267E-15	4.262E-15	4.255E-15	4.202E-15	4.137E-15	3.650E-15	3.119E-15
Ra-226+D4	Pb-210+D1	2.640E-13	1.076E-16	3.305E-16	1.323E-15	2.732E-15	1.437E-14	2.215E-14	2.565E-14	2.480E-14
Ra-226+D4	∑DSR(j)		4.376E-15	4.598E-15	5.585E-15	6.988E-15	1.857E-14	2.629E-14	2.930E-14	2.792E-14
Ra-226+D4	Ra-226+D4	3.800E-15	6.144E-17	6.143E-17	6.135E-17	6.125E-17	6.049E-17	5.955E-17	5.253E-17	4.490E-17
Ra-226+D4	Pb-210+D2	3.800E-15	8.204E-18	2.444E-17	8.677E-17	1.589E-16	5.371E-16	7.045E-16	6.865E-16	5.924E-16
Ra-226+D4	∑DSR(j)		6.965E-17	8.586E-17	1.481E-16	2.201E-16	5.975E-16	7.640E-16	7.390E-16	6.373E-16
Sr-90+D	Sr-90+D	1.000E+00	6.640E-02	1.771E-01	5.436E-01	8.239E-01	1.122E-01	9.268E-03	2.004E-11	2.921E-22
U-238	U-238	5.450E-07	2.460E-09	5.638E-09	1.820E-08	3.357E-08	1.442E-07	1.271E-07	1.878E-08	1.703E-09
U-238+D	U-238+D	1.599E-03	2.487E-03	2.485E-03	2.479E-03	2.471E-03	2.417E-03	1.951E-03	2.938E-04	2.751E-05
U-238+D	U-234	1.599E-03	1.385E-11	8.043E-11	9.233E-10	3.244E-09	6.693E-08	1.174E-07	8.634E-08	1.564E-08
U-238+D	Th-230	1.599E-03	1.481E-16	7.027E-16	6.796E-15	2.259E-14	4.406E-13	1.505E-12	1.237E-11	1.713E-11
U-238+D	Ra-226+D	1.599E-03	1.346E-14	4.010E-14	1.605E-13	2.923E-13	1.800E-12	6.811E-12	2.492E-10	7.909E-10
U-238+D	Pb-210+D	1.599E-03	4.560E-13	1.358E-12	5.406E-12	9.681E-12	3.840E-11	7.209E-11	4.656E-10	1.267E-09
U-238+D	∑DSR(j)		2.487E-03	2.485E-03	2.479E-03	2.471E-03	2.417E-03	1.951E-03	2.939E-04	2.752E-05
U-238+D	U-238+D	2.111E-09	3.282E-09	3.280E-09	3.272E-09	3.262E-09	3.190E-09	2.575E-09	3.878E-10	3.631E-11
U-238+D	U-234	2.111E-09	1.828E-17	1.062E-16	1.219E-15	4.282E-15	8.835E-14	1.549E-13	1.140E-13	2.065E-14
U-238+D	Th-230	2.111E-09	1.955E-22	9.275E-22	8.970E-21	2.982E-20	5.815E-19	1.986E-18	1.633E-17	2.261E-17
U-238+D	Ra-226+D	2.111E-09	1.776E-20	5.293E-20	2.118E-19	3.858E-19	2.376E-18	8.991E-18	3.289E-16	1.044E-15
U-238+D	Pb-210+D1	2.111E-09	2.202E-19	6.559E-19	2.611E-18	4.676E-18	1.855E-17	3.482E-17	2.253E-16	6.133E-16
U-238+D	∑DSR(j)		3.282E-09	3.280E-09	3.272E-09	3.262E-09	3.190E-09	2.575E-09	3.879E-10	3.633E-11
U-238+D	U-238+D	3.039E-11	4.724E-11	4.722E-11	4.710E-11	4.696E-11	4.592E-11	3.706E-11	5.582E-12	5.226E-13
U-238+D	U-234	3.039E-11	2.631E-19	1.528E-18	1.754E-17	6.163E-17	1.272E-15	2.230E-15	1.640E-15	2.972E-16
U-238+D	Th-230	3.039E-11	2.813E-24	1.335E-23	1.291E-22	4.293E-22	8.371E-21	2.859E-20	2.350E-19	3.255E-19
U-238+D	Ra-226+D	3.039E-11	2.557E-22	7.619E-22	3.049E-21	5.553E-21	3.420E-20	1.294E-19	4.734E-18	1.503E-17
U-238+D	Pb-210+D2	3.039E-11	3.164E-21	9.424E-21	3.751E-20	6.717E-20	2.667E-19	5.027E-19	3.461E-18	9.590E-18
U-238+D	∑DSR(j)		4.724E-11	4.722E-11	4.710E-11	4.696E-11	4.592E-11	3.707E-11	5.583E-12	5.230E-13
U-238+D	U-238+D	3.359E-07	5.223E-07	5.220E-07	5.207E-07	5.191E-07	5.076E-07	4.097E-07	6.171E-08	5.778E-09
U-238+D	U-234	3.359E-07	2.909E-15	1.689E-14	1.939E-13	6.813E-13	1.406E-11	2.466E-11	1.814E-11	3.285E-12
U-238+D	Th-230	3.359E-07	3.110E-20	1.476E-19	1.427E-18	4.745E-18	9.254E-17	3.161E-16	2.598E-15	3.599E-15
U-238+D	Ra-226+D1	3.359E-07	2.827E-18	8.430E-18	3.403E-17	6.360E-17	5.997E-16	2.977E-15	1.309E-13	4.183E-13
U-238+D	Pb-210+D	3.359E-07	9.579E-17	2.853E-16	1.136E-15	2.034E-15	8.067E-15	1.514E-14	9.779E-14	2.660E-13
U-238+D	∑DSR(j)		5.223E-07	5.220E-07	5.207E-07	5.191E-07	5.076E-07	4.098E-07	6.172E-08	5.782E-09

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	4.434E-13	6.894E-13	6.890E-13	6.873E-13	6.852E-13	6.701E-13	5.409E-13	8.145E-14	7.626E-15
U-238+D	U-234	4.434E-13	3.839E-21	2.230E-20	2.560E-19	8.993E-19	1.856E-17	3.255E-17	2.394E-17	4.337E-18
U-238+D	Th-230	4.434E-13	4.105E-26	1.948E-25	1.884E-24	6.264E-24	1.221E-22	4.172E-22	3.429E-21	4.750E-21
U-238+D	Ra-226+D1	4.434E-13	3.732E-24	1.113E-23	4.492E-23	8.395E-23	7.916E-22	3.929E-21	1.728E-19	5.521E-19
U-238+D	Pb-210+D1	4.434E-13	4.626E-23	1.378E-22	5.484E-22	9.821E-22	3.896E-21	7.314E-21	4.732E-20	1.288E-19
U-238+D	∑DSR(j)		6.894E-13	6.890E-13	6.873E-13	6.852E-13	6.701E-13	5.409E-13	8.148E-14	7.631E-15
U-238+D	U-238+D	6.383E-15	9.924E-15	9.917E-15	9.893E-15	9.863E-15	9.645E-15	7.785E-15	1.172E-15	1.098E-16
U-238+D	U-234	6.383E-15	5.526E-23	3.210E-22	3.685E-21	1.294E-20	2.671E-19	4.685E-19	3.446E-19	6.242E-20
U-238+D	Th-230	6.383E-15	5.909E-28	2.804E-27	2.712E-26	9.016E-26	1.758E-24	6.005E-24	4.936E-23	6.837E-23
U-238+D	Ra-226+D1	6.383E-15	5.371E-26	1.602E-25	6.466E-25	1.208E-24	1.139E-23	5.656E-23	2.487E-21	7.947E-21
U-238+D	Pb-210+D2	6.383E-15	6.646E-25	1.980E-24	7.879E-24	1.411E-23	5.601E-23	1.056E-22	7.269E-22	2.014E-21
U-238+D	∑DSR(j)		9.924E-15	9.917E-15	9.893E-15	9.863E-15	9.645E-15	7.786E-15	1.173E-15	1.098E-16
U-238+D	U-238+D	3.196E-07	4.969E-07	4.966E-07	4.954E-07	4.939E-07	4.830E-07	3.898E-07	5.871E-08	5.497E-09
U-238+D	U-234	3.196E-07	2.767E-15	1.607E-14	1.845E-13	6.482E-13	1.337E-11	2.346E-11	1.725E-11	3.126E-12
U-238+D	Th-230	3.196E-07	2.959E-20	1.404E-19	1.358E-18	4.515E-18	8.804E-17	3.007E-16	2.472E-15	3.424E-15
U-238+D	Ra-226+D2	3.196E-07	2.688E-18	8.009E-18	3.203E-17	5.822E-17	3.437E-16	1.249E-15	4.413E-14	1.399E-13
U-238+D	Pb-210+D	3.196E-07	9.114E-17	2.715E-16	1.080E-15	1.935E-15	7.675E-15	1.441E-14	9.304E-14	2.531E-13
U-238+D	∑DSR(j)		4.969E-07	4.966E-07	4.954E-07	4.939E-07	4.830E-07	3.899E-07	5.873E-08	5.500E-09
U-238+D	U-238+D	4.219E-13	6.559E-13	6.555E-13	6.539E-13	6.519E-13	6.375E-13	5.146E-13	7.749E-14	7.256E-15
U-238+D	U-234	4.219E-13	3.653E-21	2.122E-20	2.436E-19	8.556E-19	1.765E-17	3.096E-17	2.278E-17	4.126E-18
U-238+D	Th-230	4.219E-13	3.906E-26	1.854E-25	1.793E-24	5.960E-24	1.162E-22	3.969E-22	3.263E-21	4.519E-21
U-238+D	Ra-226+D2	4.219E-13	3.548E-24	1.057E-23	4.228E-23	7.685E-23	4.536E-22	1.649E-21	5.825E-20	1.846E-19
U-238+D	Pb-210+D1	4.219E-13	4.401E-23	1.311E-22	5.217E-22	9.344E-22	3.706E-21	6.959E-21	4.502E-20	1.226E-19
U-238+D	∑DSR(j)		6.559E-13	6.555E-13	6.539E-13	6.519E-13	6.375E-13	5.146E-13	7.752E-14	7.260E-15
U-238+D	U-238+D	6.073E-15	9.441E-15	9.436E-15	9.412E-15	9.384E-15	9.176E-15	7.407E-15	1.115E-15	1.044E-16
U-238+D	U-234	6.073E-15	5.258E-23	3.054E-22	3.506E-21	1.232E-20	2.541E-19	4.457E-19	3.278E-19	5.939E-20
U-238+D	Th-230	6.073E-15	5.622E-28	2.668E-27	2.580E-26	8.578E-26	1.673E-24	5.713E-24	4.697E-23	6.505E-23
U-238+D	Ra-226+D2	6.073E-15	5.107E-26	1.522E-25	6.086E-25	1.106E-24	6.529E-24	2.374E-23	8.384E-22	2.657E-21
U-238+D	Pb-210+D2	6.073E-15	6.323E-25	1.883E-24	7.496E-24	1.342E-23	5.329E-23	1.005E-22	6.916E-22	1.916E-21
U-238+D	∑DSR(j)		9.441E-15	9.436E-15	9.412E-15	9.384E-15	9.177E-15	7.407E-15	1.116E-15	1.045E-16
U-238+D	U-238+D	6.713E-11	1.044E-10	1.043E-10	1.041E-10	1.037E-10	1.014E-10	8.188E-11	1.233E-11	1.155E-12
U-238+D	U-234	6.713E-11	5.812E-19	3.376E-18	3.876E-17	1.362E-16	2.809E-15	4.927E-15	3.624E-15	6.565E-16
U-238+D	Th-230	6.713E-11	6.215E-24	2.950E-23	2.853E-22	9.483E-22	1.849E-20	6.316E-20	5.192E-19	7.191E-19
U-238+D	Ra-226+D3	6.713E-11	5.646E-22	1.684E-21	6.793E-21	1.267E-20	1.165E-19	5.714E-19	2.497E-17	7.976E-17
U-238+D	Pb-210+D	6.713E-11	1.914E-20	5.701E-20	2.269E-19	4.064E-19	1.612E-18	3.026E-18	1.954E-17	5.316E-17
U-238+D	∑DSR(j)		1.044E-10	1.043E-10	1.041E-10	1.037E-10	1.014E-10	8.189E-11	1.233E-11	1.155E-12

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D	U-238+D	8.862E-17	1.378E-16	1.377E-16	1.373E-16	1.369E-16	1.339E-16	1.081E-16	1.628E-17	1.524E-18
U-238+D	U-234	8.862E-17	7.672E-25	4.457E-24	5.116E-23	1.797E-22	3.708E-21	6.504E-21	4.784E-21	8.666E-22
U-238+D	Th-230	8.862E-17	8.204E-30	3.893E-29	3.765E-28	1.252E-27	2.441E-26	8.337E-26	6.853E-25	9.492E-25
U-238+D	Ra-226+D3	8.862E-17	7.453E-28	2.223E-27	8.966E-27	1.672E-26	1.537E-25	7.542E-25	3.296E-23	1.053E-22
U-238+D	Pb-210+D1	8.862E-17	9.243E-27	2.753E-26	1.096E-25	1.963E-25	7.785E-25	1.462E-24	9.457E-24	2.574E-23
U-238+D	∑DSR(j)		1.378E-16	1.377E-16	1.373E-16	1.369E-16	1.339E-16	1.081E-16	1.628E-17	1.525E-18
U-238+D	U-238+D	1.276E-18	1.983E-18	1.982E-18	1.977E-18	1.971E-18	1.927E-18	1.556E-18	2.343E-19	2.194E-20
U-238+D	U-234	1.276E-18	1.104E-26	6.415E-26	7.364E-25	2.587E-24	5.338E-23	9.362E-23	6.886E-23	1.247E-23
U-238+D	Th-230	1.276E-18	1.181E-31	5.604E-31	5.420E-30	1.802E-29	3.514E-28	1.200E-27	9.865E-27	1.366E-26
U-238+D	Ra-226+D3	1.276E-18	1.073E-29	3.199E-29	1.291E-28	2.407E-28	2.213E-27	1.086E-26	4.744E-25	1.515E-24
U-238+D	Pb-210+D2	1.276E-18	1.328E-28	3.956E-28	1.574E-27	2.820E-27	1.119E-26	2.110E-26	1.453E-25	4.025E-25
U-238+D	∑DSR(j)		1.983E-18	1.982E-18	1.977E-18	1.971E-18	1.928E-18	1.556E-18	2.344E-19	2.195E-20
U-238+D	U-238+D	3.200E-10	4.975E-10	4.972E-10	4.960E-10	4.945E-10	4.836E-10	3.903E-10	5.878E-11	5.504E-12
U-238+D	U-234	3.200E-10	2.771E-18	1.609E-17	1.847E-16	6.490E-16	1.339E-14	2.349E-14	1.728E-14	3.129E-15
U-238+D	Th-230	3.200E-10	2.963E-23	1.406E-22	1.360E-21	4.520E-21	8.815E-20	3.011E-19	2.475E-18	3.428E-18
U-238+D	Ra-226+D4	3.200E-10	2.690E-21	8.012E-21	3.189E-20	5.712E-20	2.288E-19	4.475E-19	3.363E-18	9.012E-18
U-238+D	Pb-210+D	3.200E-10	9.123E-20	2.718E-19	1.082E-18	1.937E-18	7.683E-18	1.442E-17	9.315E-17	2.534E-16
U-238+D	∑DSR(j)		4.975E-10	4.972E-10	4.960E-10	4.945E-10	4.836E-10	3.903E-10	5.880E-11	5.507E-12
U-238+D	U-238+D	4.224E-16	6.567E-16	6.563E-16	6.547E-16	6.527E-16	6.383E-16	5.152E-16	7.759E-17	7.265E-18
U-238+D	U-234	4.224E-16	3.657E-24	2.124E-23	2.438E-22	8.567E-22	1.768E-20	3.100E-20	2.280E-20	4.131E-21
U-238+D	Th-230	4.224E-16	3.911E-29	1.856E-28	1.795E-27	5.967E-27	1.164E-25	3.974E-25	3.267E-24	4.525E-24
U-238+D	Ra-226+D4	4.224E-16	3.550E-27	1.058E-26	4.210E-26	7.540E-26	3.021E-25	5.906E-25	4.440E-24	1.190E-23
U-238+D	Pb-210+D1	4.224E-16	4.406E-26	1.312E-25	5.224E-25	9.355E-25	3.711E-24	6.967E-24	4.508E-23	1.227E-22
U-238+D	∑DSR(j)		6.567E-16	6.563E-16	6.547E-16	6.527E-16	6.383E-16	5.152E-16	7.761E-17	7.269E-18
U-238+D	U-238+D	6.080E-18	9.453E-18	9.447E-18	9.424E-18	9.395E-18	9.188E-18	7.416E-18	1.117E-18	1.046E-19
U-238+D	U-234	6.080E-18	5.264E-26	3.058E-25	3.510E-24	1.233E-23	2.544E-22	4.462E-22	3.282E-22	5.946E-23
U-238+D	Th-230	6.080E-18	5.629E-31	2.671E-30	2.583E-29	8.589E-29	1.675E-27	5.720E-27	4.702E-26	6.513E-26
U-238+D	Ra-226+D4	6.080E-18	5.110E-29	1.522E-28	6.059E-28	1.085E-27	4.348E-27	8.502E-27	6.390E-26	1.712E-25
U-238+D	Pb-210+D2	6.080E-18	6.330E-28	1.886E-27	7.505E-27	1.344E-26	5.336E-26	1.006E-25	6.924E-25	1.919E-24
U-238+D	∑DSR(j)		9.453E-18	9.447E-18	9.424E-18	9.395E-18	9.188E-18	7.416E-18	1.117E-18	1.046E-19
U-238+D1	U-238+D1	9.980E-01	3.233E-02	3.846E-02	6.270E-02	9.235E-02	3.058E-01	2.675E-01	3.960E-02	3.600E-03
U-238+D1	U-234	9.980E-01	8.641E-09	5.019E-08	5.761E-07	2.024E-06	4.176E-05	7.325E-05	5.388E-05	9.760E-06
U-238+D1	Th-230	9.980E-01	9.240E-14	4.385E-13	4.241E-12	1.410E-11	2.749E-10	9.389E-10	7.718E-09	1.069E-08
U-238+D1	Ra-226+D	9.980E-01	8.397E-12	2.502E-11	1.001E-10	1.824E-10	1.123E-09	4.250E-09	1.555E-07	4.935E-07
U-238+D1	Pb-210+D	9.980E-01	2.845E-10	8.475E-10	3.373E-09	6.041E-09	2.396E-08	4.499E-08	2.905E-07	7.903E-07
U-238+D1	∑DSR(j)		3.233E-02	3.846E-02	6.270E-02	9.236E-02	3.058E-01	2.676E-01	3.965E-02	3.611E-03

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	1.317E-06	4.267E-08	5.076E-08	8.276E-08	1.219E-07	4.036E-07	3.531E-07	5.227E-08	4.753E-09
U-238+D1	U-234	1.317E-06	1.141E-14	6.625E-14	7.605E-13	2.672E-12	5.513E-11	9.669E-11	7.112E-11	1.288E-11
U-238+D1	Th-230	1.317E-06	1.220E-19	5.788E-19	5.598E-18	1.861E-17	3.629E-16	1.239E-15	1.019E-14	1.411E-14
U-238+D1	Ra-226+D	1.317E-06	1.108E-17	3.303E-17	1.322E-16	2.407E-16	1.483E-15	5.610E-15	2.052E-13	6.514E-13
U-238+D1	Pb-210+D1	1.317E-06	1.374E-16	4.093E-16	1.629E-15	2.918E-15	1.157E-14	2.173E-14	1.406E-13	3.827E-13
U-238+D1	∑DSR(j)		4.267E-08	5.076E-08	8.276E-08	1.219E-07	4.037E-07	3.532E-07	5.234E-08	4.766E-09
U-238+D1	U-238+D1	1.896E-08	6.142E-10	7.307E-10	1.191E-09	1.755E-09	5.810E-09	5.083E-09	7.523E-10	6.841E-11
U-238+D1	U-234	1.896E-08	1.642E-16	9.536E-16	1.095E-14	3.846E-14	7.935E-13	1.392E-12	1.024E-12	1.854E-13
U-238+D1	Th-230	1.896E-08	1.756E-21	8.331E-21	8.057E-20	2.679E-19	5.223E-18	1.784E-17	1.467E-16	2.031E-16
U-238+D1	Ra-226+D	1.896E-08	1.595E-19	4.754E-19	1.903E-18	3.465E-18	2.134E-17	8.076E-17	2.954E-15	9.377E-15
U-238+D1	Pb-210+D2	1.896E-08	1.974E-18	5.881E-18	2.341E-17	4.192E-17	1.664E-16	3.137E-16	2.159E-15	5.984E-15
U-238+D1	∑DSR(j)		6.142E-10	7.307E-10	1.191E-09	1.755E-09	5.810E-09	5.084E-09	7.534E-10	6.861E-11
U-238+D1	U-238+D1	2.096E-04	6.790E-06	8.078E-06	1.317E-05	1.940E-05	6.423E-05	5.619E-05	8.317E-06	7.562E-07
U-238+D1	U-234	2.096E-04	1.815E-12	1.054E-11	1.210E-10	4.251E-10	8.772E-09	1.539E-08	1.132E-08	2.050E-09
U-238+D1	Th-230	2.096E-04	1.941E-17	9.210E-17	8.907E-16	2.961E-15	5.774E-14	1.972E-13	1.621E-12	2.245E-12
U-238+D1	Ra-226+D1	2.096E-04	1.764E-15	5.261E-15	2.124E-14	3.968E-14	3.742E-13	1.857E-12	8.167E-11	2.610E-10
U-238+D1	Pb-210+D	2.096E-04	5.976E-14	1.780E-13	7.085E-13	1.269E-12	5.033E-12	9.449E-12	6.102E-11	1.660E-10
U-238+D1	∑DSR(j)		6.790E-06	8.078E-06	1.317E-05	1.940E-05	6.423E-05	5.621E-05	8.328E-06	7.587E-07
U-238+D1	U-238+D1	2.767E-10	8.963E-12	1.066E-11	1.738E-11	2.561E-11	8.478E-11	7.417E-11	1.098E-11	9.982E-13
U-238+D1	U-234	2.767E-10	2.396E-18	1.392E-17	1.597E-16	5.612E-16	1.158E-14	2.031E-14	1.494E-14	2.706E-15
U-238+D1	Th-230	2.767E-10	2.562E-23	1.216E-22	1.176E-21	3.909E-21	7.622E-20	2.603E-19	2.140E-18	2.964E-18
U-238+D1	Ra-226+D1	2.767E-10	2.328E-21	6.944E-21	2.803E-20	5.238E-20	4.940E-19	2.452E-18	1.078E-16	3.445E-16
U-238+D1	Pb-210+D1	2.767E-10	2.887E-20	8.598E-20	3.422E-19	6.129E-19	2.431E-18	4.564E-18	2.953E-17	8.038E-17
U-238+D1	∑DSR(j)		8.963E-12	1.066E-11	1.738E-11	2.561E-11	8.479E-11	7.419E-11	1.099E-11	1.001E-12
U-238+D1	U-238+D1	3.983E-12	1.290E-13	1.535E-13	2.502E-13	3.686E-13	1.220E-12	1.068E-12	1.580E-13	1.437E-14
U-238+D1	U-234	3.983E-12	3.448E-20	2.003E-19	2.299E-18	8.078E-18	1.667E-16	2.923E-16	2.150E-16	3.895E-17
U-238+D1	Th-230	3.983E-12	3.687E-25	1.750E-24	1.692E-23	5.626E-23	1.097E-21	3.747E-21	3.080E-20	4.266E-20
U-238+D1	Ra-226+D1	3.983E-12	3.352E-23	9.995E-23	4.035E-22	7.540E-22	7.110E-21	3.529E-20	1.552E-18	4.959E-18
U-238+D1	Pb-210+D2	3.983E-12	4.147E-22	1.235E-21	4.916E-21	8.804E-21	3.495E-20	6.589E-20	4.536E-19	1.257E-18
U-238+D1	∑DSR(j)		1.290E-13	1.535E-13	2.502E-13	3.686E-13	1.220E-12	1.068E-12	1.582E-13	1.441E-14
U-238+D1	U-238+D1	1.994E-04	6.460E-06	7.685E-06	1.253E-05	1.846E-05	6.111E-05	5.346E-05	7.913E-06	7.195E-07
U-238+D1	U-234	1.994E-04	1.727E-12	1.003E-11	1.151E-10	4.045E-10	8.346E-09	1.464E-08	1.077E-08	1.950E-09
U-238+D1	Th-230	1.994E-04	1.846E-17	8.762E-17	8.474E-16	2.817E-15	5.494E-14	1.876E-13	1.542E-12	2.136E-12
U-238+D1	Ra-226+D2	1.994E-04	1.677E-15	4.998E-15	1.999E-14	3.633E-14	2.144E-13	7.797E-13	2.754E-11	8.727E-11
U-238+D1	Pb-210+D	1.994E-04	5.686E-14	1.694E-13	6.741E-13	1.207E-12	4.789E-12	8.990E-12	5.806E-11	1.579E-10
U-238+D1	∑DSR(j)		6.460E-06	7.685E-06	1.253E-05	1.846E-05	6.111E-05	5.348E-05	7.924E-06	7.217E-07

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.633E-10	8.528E-12	1.014E-11	1.654E-11	2.436E-11	8.066E-11	7.057E-11	1.045E-11	9.497E-13
U-238+D1	U-234	2.633E-10	2.279E-18	1.324E-17	1.520E-16	5.339E-16	1.102E-14	1.932E-14	1.421E-14	2.575E-15
U-238+D1	Th-230	2.633E-10	2.437E-23	1.157E-22	1.119E-21	3.719E-21	7.252E-20	2.477E-19	2.036E-18	2.820E-18
U-238+D1	Ra-226+D2	2.633E-10	2.214E-21	6.597E-21	2.638E-20	4.796E-20	2.831E-19	1.029E-18	3.635E-17	1.152E-16
U-238+D1	Pb-210+D1	2.633E-10	2.746E-20	8.180E-20	3.256E-19	5.830E-19	2.313E-18	4.342E-18	2.810E-17	7.647E-17
U-238+D1	∑DSR(j)		8.528E-12	1.014E-11	1.654E-11	2.436E-11	8.067E-11	7.059E-11	1.046E-11	9.525E-13
U-238+D1	U-238+D1	3.789E-12	1.227E-13	1.460E-13	2.381E-13	3.507E-13	1.161E-12	1.016E-12	1.503E-13	1.367E-14
U-238+D1	U-234	3.789E-12	3.281E-20	1.906E-19	2.188E-18	7.685E-18	1.586E-16	2.781E-16	2.046E-16	3.706E-17
U-238+D1	Th-230	3.789E-12	3.508E-25	1.665E-24	1.610E-23	5.353E-23	1.044E-21	3.565E-21	2.931E-20	4.059E-20
U-238+D1	Ra-226+D2	3.789E-12	3.187E-23	9.496E-23	3.798E-22	6.903E-22	4.074E-21	1.481E-20	5.232E-19	1.658E-18
U-238+D1	Pb-210+D2	3.789E-12	3.945E-22	1.175E-21	4.678E-21	8.377E-21	3.326E-20	6.269E-20	4.315E-19	1.196E-18
U-238+D1	∑DSR(j)		1.227E-13	1.460E-13	2.381E-13	3.507E-13	1.161E-12	1.016E-12	1.506E-13	1.371E-14
U-238+D1	U-238+D1	4.189E-08	1.357E-09	1.614E-09	2.632E-09	3.877E-09	1.283E-08	1.123E-08	1.662E-09	1.511E-10
U-238+D1	U-234	4.189E-08	3.627E-16	2.107E-15	2.418E-14	8.496E-14	1.753E-12	3.075E-12	2.261E-12	4.097E-13
U-238+D1	Th-230	4.189E-08	3.878E-21	1.841E-20	1.780E-19	5.918E-19	1.154E-17	3.941E-17	3.240E-16	4.487E-16
U-238+D1	Ra-226+D3	4.189E-08	3.523E-19	1.051E-18	4.239E-18	7.906E-18	7.267E-17	3.565E-16	1.558E-14	4.977E-14
U-238+D1	Pb-210+D	4.189E-08	1.194E-17	3.557E-17	1.416E-16	2.536E-16	1.006E-15	1.888E-15	1.219E-14	3.317E-14
U-238+D1	∑DSR(j)		1.357E-09	1.614E-09	2.632E-09	3.877E-09	1.284E-08	1.123E-08	1.664E-09	1.516E-10
U-238+D1	U-238+D1	5.530E-14	1.791E-15	2.131E-15	3.474E-15	5.117E-15	1.694E-14	1.482E-14	2.194E-15	1.995E-16
U-238+D1	U-234	5.530E-14	4.788E-22	2.781E-21	3.192E-20	1.121E-19	2.314E-18	4.058E-18	2.985E-18	5.408E-19
U-238+D1	Th-230	5.530E-14	5.119E-27	2.429E-26	2.350E-25	7.811E-25	1.523E-23	5.202E-23	4.277E-22	5.923E-22
U-238+D1	Ra-226+D3	5.530E-14	4.651E-25	1.387E-24	5.595E-24	1.044E-23	9.593E-23	4.706E-22	2.056E-20	6.570E-20
U-238+D1	Pb-210+D1	5.530E-14	5.768E-24	1.718E-23	6.838E-23	1.225E-22	4.858E-22	9.121E-22	5.901E-21	1.606E-20
U-238+D1	∑DSR(j)		1.791E-15	2.131E-15	3.474E-15	5.117E-15	1.694E-14	1.483E-14	2.197E-15	2.001E-16
U-238+D1	U-238+D1	7.959E-16	2.578E-17	3.067E-17	5.000E-17	7.365E-17	2.439E-16	2.134E-16	3.158E-17	2.871E-18
U-238+D1	U-234	7.959E-16	6.891E-24	4.003E-23	4.595E-22	1.614E-21	3.331E-20	5.842E-20	4.297E-20	7.784E-21
U-238+D1	Th-230	7.959E-16	7.369E-29	3.497E-28	3.382E-27	1.124E-26	2.192E-25	7.488E-25	6.156E-24	8.526E-24
U-238+D1	Ra-226+D3	7.959E-16	6.694E-27	1.996E-26	8.053E-26	1.502E-25	1.381E-24	6.774E-24	2.960E-22	9.457E-22
U-238+D1	Pb-210+D2	7.959E-16	8.287E-26	2.468E-25	9.825E-25	1.760E-24	6.985E-24	1.317E-23	9.064E-23	2.512E-22
U-238+D1	∑DSR(j)		2.578E-17	3.067E-17	5.000E-17	7.366E-17	2.439E-16	2.134E-16	3.162E-17	2.880E-18
U-238+D1	U-238+D1	1.997E-07	6.468E-09	7.695E-09	1.254E-08	1.848E-08	6.118E-08	5.353E-08	7.922E-09	7.204E-10
U-238+D1	U-234	1.997E-07	1.729E-15	1.004E-14	1.153E-13	4.050E-13	8.356E-12	1.466E-11	1.078E-11	1.953E-12
U-238+D1	Th-230	1.997E-07	1.849E-20	8.773E-20	8.485E-19	2.821E-18	5.500E-17	1.879E-16	1.544E-15	2.139E-15
U-238+D1	Ra-226+D4	1.997E-07	1.678E-18	5.000E-18	1.990E-17	3.564E-17	1.428E-16	2.792E-16	2.099E-15	5.623E-15
U-238+D1	Pb-210+D	1.997E-07	5.693E-17	1.696E-16	6.750E-16	1.209E-15	4.795E-15	9.001E-15	5.813E-14	1.581E-13
U-238+D1	∑DSR(j)		6.468E-09	7.695E-09	1.254E-08	1.848E-08	6.119E-08	5.354E-08	7.933E-09	7.225E-10

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Dose/Source Ratios Summed Over All Pathways

Parent and Progeny Principal Radionuclide Contributions Indicated

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g) 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
U-238+D1	U-238+D1	2.636E-13	8.538E-15	1.016E-14	1.656E-14	2.439E-14	8.076E-14	7.065E-14	1.046E-14	9.509E-16
U-238+D1	U-234	2.636E-13	2.282E-21	1.326E-20	1.522E-19	5.346E-19	1.103E-17	1.935E-17	1.423E-17	2.578E-18
U-238+D1	Th-230	2.636E-13	2.440E-26	1.158E-25	1.120E-24	3.723E-24	7.261E-23	2.480E-22	2.039E-21	2.823E-21
U-238+D1	Ra-226+D4	2.636E-13	2.215E-24	6.599E-24	2.627E-23	4.705E-23	1.885E-22	3.686E-22	2.770E-21	7.423E-21
U-238+D1	Pb-210+D1	2.636E-13	2.750E-23	8.191E-23	3.260E-22	5.838E-22	2.316E-21	4.348E-21	2.813E-20	7.657E-20
U-238+D1	∑DSR(j)		8.538E-15	1.016E-14	1.656E-14	2.439E-14	8.077E-14	7.067E-14	1.047E-14	9.536E-16
U-238+D1	U-238+D1	3.794E-15	1.229E-16	1.462E-16	2.383E-16	3.511E-16	1.162E-15	1.017E-15	1.505E-16	1.369E-17
U-238+D1	U-234	3.794E-15	3.285E-23	1.908E-22	2.190E-21	7.694E-21	1.588E-19	2.785E-19	2.048E-19	3.710E-20
U-238+D1	Th-230	3.794E-15	3.512E-28	1.667E-27	1.612E-26	5.359E-26	1.045E-24	3.569E-24	2.934E-23	4.064E-23
U-238+D1	Ra-226+D4	3.794E-15	3.189E-26	9.499E-26	3.781E-25	6.773E-25	2.713E-24	5.305E-24	3.988E-23	1.068E-22
U-238+D1	Pb-210+D2	3.794E-15	3.950E-25	1.177E-24	4.683E-24	8.387E-24	3.330E-23	6.277E-23	4.321E-22	1.197E-21
U-238+D1	∑DSR(j)		1.229E-16	1.462E-16	2.384E-16	3.511E-16	1.163E-15	1.017E-15	1.507E-16	1.373E-17

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

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	2.579E+01	2.640E+01	2.897E+01	3.254E+01	8.252E+01	2.640E+02	2.899E+06	3.256E+11
Ra-226	7.725E+00	7.721E+00	7.702E+00	7.672E+00	7.404E+00	7.316E+00	8.813E+00	1.132E+01
Sr-90	2.259E+02	8.469E+01	2.759E+01	1.821E+01	1.337E+02	1.619E+03	7.486E+11	*1.366E+14
U-238	4.307E+02	3.662E+02	2.300E+02	1.581E+02	4.865E+01	5.563E+01	3.754E+02	4.120E+03

*At specific activity limit

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

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

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 9.36 ± 0.02 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin) (pCi/g)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Cs-137	1.330E+00	0.000E+00	5.816E-01	2.579E+01	4.678E-01	3.207E+01
Ra-226	6.500E-01	91.9 ± 0.2	2.051E+00	7.313E+00	1.954E+00	7.676E+00
Sr-90	3.300E-01	9.62 ± 0.02	8.286E-01	1.810E+01	8.240E-01	1.820E+01
U-238	6.400E-01	55.6 ± 0.1	3.331E-01	4.504E+01	9.112E-02	1.646E+02

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	7.735E-01	7.558E-01	6.886E-01	6.130E-01	2.418E-01	7.557E-02	6.883E-06	6.127E-11
Ra-226	Ra-226	9.996E-01	1.261E+00	1.260E+00	1.257E+00	1.253E+00	1.224E+00	1.188E+00	9.374E-01	6.972E-01
Ra-226	Ra-226	1.319E-06	1.664E-06	1.663E-06	1.659E-06	1.654E-06	1.615E-06	1.568E-06	1.237E-06	9.203E-07
Ra-226	U-238	1.599E-03	8.612E-15	2.566E-14	1.027E-13	1.871E-13	1.152E-12	4.359E-12	1.595E-10	5.062E-10
Ra-226	U-238	2.111E-09	1.137E-20	3.388E-20	1.356E-19	2.469E-19	1.521E-18	5.754E-18	2.105E-16	6.681E-16
Ra-226	U-238	3.039E-11	1.636E-22	4.876E-22	1.952E-21	3.554E-21	2.189E-20	8.283E-20	3.030E-18	9.617E-18
Ra-226	U-238	9.980E-01	5.374E-12	1.601E-11	6.409E-11	1.167E-10	7.189E-10	2.720E-09	9.951E-08	3.158E-07
Ra-226	U-238	1.317E-06	7.094E-18	2.114E-17	8.460E-17	1.541E-16	9.490E-16	3.591E-15	1.314E-13	4.169E-13
Ra-226	U-238	1.896E-08	1.021E-19	3.043E-19	1.218E-18	2.218E-18	1.366E-17	5.168E-17	1.891E-15	6.001E-15
Ra-226	∑DOSE(j)		1.261E+00	1.260E+00	1.257E+00	1.253E+00	1.224E+00	1.188E+00	9.374E-01	6.972E-01
Pb-210	Ra-226	9.996E-01	6.330E-04	1.955E-03	7.979E-03	1.675E-02	9.215E-02	1.437E-01	1.682E-01	1.636E-01
Pb-210	Ra-226	2.100E-04	1.329E-07	4.107E-07	1.676E-06	3.518E-06	1.936E-05	3.019E-05	3.533E-05	3.436E-05
Pb-210	Ra-226	1.998E-04	1.265E-07	3.907E-07	1.595E-06	3.347E-06	1.842E-05	2.872E-05	3.362E-05	3.269E-05
Pb-210	Ra-226	4.196E-08	2.657E-11	8.207E-11	3.349E-10	7.031E-10	3.868E-09	6.033E-09	7.061E-09	6.866E-09
Pb-210	Ra-226	2.000E-07	1.266E-10	3.912E-10	1.596E-09	3.351E-09	1.844E-08	2.876E-08	3.366E-08	3.273E-08
Pb-210	U-238	1.599E-03	2.918E-13	8.693E-13	3.460E-12	6.196E-12	2.458E-11	4.614E-11	2.980E-10	8.106E-10
Pb-210	U-238	3.359E-07	6.131E-17	1.826E-16	7.268E-16	1.302E-15	5.163E-15	9.692E-15	6.259E-14	1.703E-13
Pb-210	U-238	3.196E-07	5.833E-17	1.737E-16	6.915E-16	1.238E-15	4.912E-15	9.221E-15	5.955E-14	1.620E-13
Pb-210	U-238	6.713E-11	1.225E-20	3.649E-20	1.452E-19	2.601E-19	1.032E-18	1.937E-18	1.251E-17	3.403E-17
Pb-210	U-238	3.200E-10	5.839E-20	1.739E-19	6.922E-19	1.240E-18	4.917E-18	9.232E-18	5.962E-17	1.622E-16
Pb-210	U-238	9.980E-01	1.821E-10	5.424E-10	2.159E-09	3.866E-09	1.534E-08	2.879E-08	1.859E-07	5.058E-07
Pb-210	U-238	2.096E-04	3.825E-14	1.139E-13	4.535E-13	8.121E-13	3.221E-12	6.048E-12	3.905E-11	1.062E-10
Pb-210	U-238	1.994E-04	3.639E-14	1.084E-13	4.314E-13	7.727E-13	3.065E-12	5.754E-12	3.716E-11	1.011E-10
Pb-210	U-238	4.189E-08	7.644E-18	2.277E-17	9.062E-17	1.623E-16	6.437E-16	1.209E-15	7.805E-15	2.123E-14
Pb-210	U-238	1.997E-07	3.644E-17	1.085E-16	4.320E-16	7.736E-16	3.069E-15	5.761E-15	3.720E-14	1.012E-13
Pb-210	∑DOSE(j)		6.332E-04	1.956E-03	7.982E-03	1.676E-02	9.219E-02	1.438E-01	1.683E-01	1.636E-01
Pb-210	Ra-226	1.319E-06	3.495E-10	1.074E-09	4.299E-09	8.876E-09	4.668E-08	7.196E-08	8.333E-08	8.055E-08
Pb-210	Ra-226	1.899E-08	2.665E-11	7.939E-11	2.819E-10	5.162E-10	1.745E-09	2.289E-09	2.230E-09	1.924E-09
Pb-210	Ra-226	2.771E-10	7.341E-14	2.255E-13	9.030E-13	1.864E-12	9.805E-12	1.511E-11	1.750E-11	1.692E-11
Pb-210	Ra-226	2.637E-10	6.984E-14	2.146E-13	8.591E-13	1.774E-12	9.329E-12	1.438E-11	1.665E-11	1.610E-11
Pb-210	Ra-226	5.538E-14	1.467E-17	4.507E-17	1.805E-16	3.726E-16	1.959E-15	3.020E-15	3.498E-15	3.381E-15
Pb-210	Ra-226	2.640E-13	6.992E-17	2.148E-16	8.602E-16	1.776E-15	9.340E-15	1.440E-14	1.667E-14	1.612E-14
Pb-210	U-238	2.111E-09	1.409E-19	4.198E-19	1.671E-18	2.992E-18	1.187E-17	2.229E-17	1.442E-16	3.925E-16
Pb-210	U-238	4.434E-13	2.960E-23	8.818E-23	3.510E-22	6.285E-22	2.493E-21	4.681E-21	3.029E-20	8.244E-20
Pb-210	U-238	4.219E-13	2.816E-23	8.389E-23	3.339E-22	5.980E-22	2.372E-21	4.454E-21	2.882E-20	7.844E-20
Pb-210	U-238	8.862E-17	5.916E-27	1.762E-26	7.014E-26	1.256E-25	4.982E-25	9.355E-25	6.053E-24	1.647E-23
Pb-210	U-238	4.224E-16	2.820E-26	8.400E-26	3.343E-25	5.987E-25	2.375E-24	4.459E-24	2.885E-23	7.853E-23
Pb-210	U-238	1.317E-06	8.795E-17	2.620E-16	1.043E-15	1.867E-15	7.407E-15	1.391E-14	8.998E-14	2.449E-13
Pb-210	U-238	2.767E-10	1.847E-20	5.503E-20	2.190E-19	3.922E-19	1.556E-18	2.921E-18	1.890E-17	5.144E-17
Pb-210	U-238	2.633E-10	1.757E-20	5.235E-20	2.084E-19	3.731E-19	1.480E-18	2.779E-18	1.798E-17	4.894E-17
Pb-210	U-238	5.530E-14	3.691E-24	1.100E-23	4.376E-23	7.838E-23	3.109E-22	5.837E-22	3.777E-21	1.028E-20
Pb-210	U-238	2.636E-13	1.760E-23	5.242E-23	2.086E-22	3.737E-22	1.482E-21	2.783E-21	1.800E-20	4.900E-20
Pb-210	∑DOSE(j)		3.763E-10	1.154E-09	4.583E-09	9.396E-09	4.844E-08	7.428E-08	8.559E-08	8.251E-08
Ra-226	Ra-226	1.899E-08	2.395E-08	2.394E-08	2.388E-08	2.381E-08	2.325E-08	2.257E-08	1.781E-08	1.325E-08
Ra-226	Ra-226	2.100E-04	6.874E-04	6.870E-04	6.854E-04	6.834E-04	6.673E-04	6.478E-04	5.108E-04	3.795E-04
Ra-226	∑DOSE(j)		6.875E-04	6.870E-04	6.854E-04	6.834E-04	6.673E-04	6.478E-04	5.108E-04	3.796E-04

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract
File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-NO BKD SUB-C.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	9.074E-10	9.069E-10	9.047E-10	9.020E-10	8.808E-10	8.551E-10	6.742E-10	5.010E-10
Ra-226	Ra-226	3.989E-12	1.306E-11	1.305E-11	1.302E-11	1.298E-11	1.268E-11	1.231E-11	9.705E-12	7.211E-12
Ra-226	∑DOSE(j)		9.205E-10	9.199E-10	9.177E-10	9.150E-10	8.935E-10	8.674E-10	6.839E-10	5.082E-10
Pb-210	Ra-226	3.989E-12	5.598E-15	1.668E-14	5.921E-14	1.084E-13	3.665E-13	4.807E-13	4.684E-13	4.042E-13
Pb-210	Ra-226	3.795E-12	5.326E-15	1.587E-14	5.633E-14	1.032E-13	3.487E-13	4.574E-13	4.457E-13	3.846E-13
Pb-210	Ra-226	7.972E-16	1.119E-18	3.333E-18	1.183E-17	2.167E-17	7.324E-17	9.607E-17	9.361E-17	8.078E-17
Pb-210	Ra-226	3.800E-15	5.333E-18	1.589E-17	5.640E-17	1.033E-16	3.491E-16	4.579E-16	4.462E-16	3.850E-16
Pb-210	U-238	3.039E-11	2.025E-21	6.031E-21	2.401E-20	4.299E-20	1.707E-19	3.218E-19	2.215E-18	6.138E-18
Pb-210	U-238	6.383E-15	4.253E-25	1.267E-24	5.042E-24	9.030E-24	3.585E-23	6.757E-23	4.652E-22	1.289E-21
Pb-210	U-238	6.073E-15	4.046E-25	1.205E-24	4.797E-24	8.592E-24	3.411E-23	6.430E-23	4.426E-22	1.227E-21
Pb-210	U-238	1.276E-18	8.499E-29	2.532E-28	1.008E-27	1.805E-27	7.164E-27	1.351E-26	9.297E-26	2.576E-25
Pb-210	U-238	6.080E-18	4.052E-28	1.207E-27	4.803E-27	8.602E-27	3.415E-26	6.438E-26	4.431E-25	1.228E-24
Pb-210	U-238	1.896E-08	1.263E-18	3.764E-18	1.498E-17	2.683E-17	1.065E-16	2.008E-16	1.382E-15	3.830E-15
Pb-210	U-238	3.983E-12	2.654E-22	7.905E-22	3.146E-21	5.635E-21	2.237E-20	4.217E-20	2.903E-19	8.044E-19
Pb-210	U-238	3.789E-12	2.525E-22	7.521E-22	2.994E-21	5.361E-21	2.128E-20	4.012E-20	2.762E-19	7.654E-19
Pb-210	U-238	7.959E-16	5.304E-26	1.580E-25	6.288E-25	1.126E-24	4.470E-24	8.428E-24	5.801E-23	1.608E-22
Pb-210	U-238	3.794E-15	2.528E-25	7.530E-25	2.997E-24	5.368E-24	2.131E-23	4.017E-23	2.765E-22	7.663E-22
Pb-210	∑DOSE(j)		1.093E-14	3.257E-14	1.156E-13	2.117E-13	7.157E-13	9.388E-13	9.160E-13	7.931E-13
Ra-226	Ra-226	1.998E-04	2.214E-04	2.213E-04	2.208E-04	2.201E-04	2.150E-04	2.087E-04	1.647E-04	1.225E-04
Ra-226	Ra-226	2.637E-10	2.923E-10	2.921E-10	2.914E-10	2.906E-10	2.838E-10	2.755E-10	2.174E-10	1.617E-10
Ra-226	U-238	3.196E-07	1.720E-18	5.126E-18	2.050E-17	3.726E-17	2.199E-16	7.996E-16	2.824E-14	8.951E-14
Ra-226	U-238	4.219E-13	2.271E-24	6.766E-24	2.706E-23	4.919E-23	2.903E-22	1.056E-21	3.728E-20	1.182E-19
Ra-226	U-238	6.073E-15	3.268E-26	9.739E-26	3.895E-25	7.080E-25	4.179E-24	1.519E-23	5.366E-22	1.701E-21
Ra-226	U-238	1.994E-04	1.073E-15	3.199E-15	1.279E-14	2.325E-14	1.372E-13	4.990E-13	1.762E-11	5.585E-11
Ra-226	U-238	2.633E-10	1.417E-21	4.222E-21	1.689E-20	3.069E-20	1.812E-19	6.587E-19	2.326E-17	7.373E-17
Ra-226	U-238	3.789E-12	2.039E-23	6.077E-23	2.431E-22	4.418E-22	2.608E-21	9.481E-21	3.348E-19	1.061E-18
Ra-226	∑DOSE(j)		2.214E-04	2.213E-04	2.208E-04	2.201E-04	2.150E-04	2.087E-04	1.647E-04	1.225E-04
Ra-226	Ra-226	3.795E-12	4.207E-12	4.205E-12	4.195E-12	4.183E-12	4.085E-12	3.965E-12	3.129E-12	2.328E-12
Ra-226	Ra-226	4.196E-08	1.310E-07	1.309E-07	1.306E-07	1.302E-07	1.271E-07	1.234E-07	9.732E-08	7.232E-08
Ra-226	∑DOSE(j)		1.310E-07	1.309E-07	1.306E-07	1.302E-07	1.271E-07	1.234E-07	9.732E-08	7.232E-08
Ra-226	Ra-226	5.538E-14	1.729E-13	1.728E-13	1.724E-13	1.719E-13	1.678E-13	1.629E-13	1.285E-13	9.546E-14
Ra-226	Ra-226	7.972E-16	2.488E-15	2.487E-15	2.481E-15	2.474E-15	2.416E-15	2.345E-15	1.849E-15	1.374E-15
Ra-226	∑DOSE(j)		1.754E-13	1.753E-13	1.749E-13	1.743E-13	1.702E-13	1.653E-13	1.303E-13	9.683E-14
Ra-226	Ra-226	2.000E-07	2.102E-09	2.101E-09	2.099E-09	2.095E-09	2.069E-09	2.037E-09	1.797E-09	1.536E-09
Ra-226	Ra-226	2.640E-13	2.775E-15	2.774E-15	2.770E-15	2.766E-15	2.732E-15	2.689E-15	2.372E-15	2.028E-15
Ra-226	U-238	3.200E-10	1.721E-21	5.128E-21	2.041E-20	3.656E-20	1.465E-19	2.864E-19	2.153E-18	5.768E-18
Ra-226	U-238	4.224E-16	2.272E-27	6.769E-27	2.694E-26	4.826E-26	1.933E-25	3.780E-25	2.841E-24	7.613E-24
Ra-226	U-238	6.080E-18	3.271E-29	9.743E-29	3.878E-28	6.945E-28	2.782E-27	5.441E-27	4.090E-26	1.096E-25
Ra-226	U-238	1.997E-07	1.074E-18	3.200E-18	1.274E-17	2.281E-17	9.139E-17	1.787E-16	1.343E-15	3.599E-15
Ra-226	U-238	2.636E-13	1.418E-24	4.224E-24	1.681E-23	3.011E-23	1.206E-22	2.359E-22	1.773E-21	4.751E-21
Ra-226	U-238	3.794E-15	2.041E-26	6.079E-26	2.420E-25	4.334E-25	1.736E-24	3.395E-24	2.552E-23	6.838E-23
Ra-226	∑DOSE(j)		2.102E-09	2.101E-09	2.099E-09	2.095E-09	2.069E-09	2.037E-09	1.797E-09	1.536E-09
Ra-226	Ra-226	3.800E-15	3.994E-17	3.993E-17	3.988E-17	3.981E-17	3.932E-17	3.871E-17	3.415E-17	2.918E-17

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	2.191E-02	5.845E-02	1.794E-01	2.719E-01	3.702E-02	3.058E-03	6.612E-12	9.641E-23
U-238	U-238	5.450E-07	1.575E-09	3.608E-09	1.165E-08	2.149E-08	9.229E-08	8.134E-08	1.202E-08	1.090E-09
U-238	U-238	1.599E-03	1.591E-03	1.590E-03	1.586E-03	1.582E-03	1.547E-03	1.248E-03	1.880E-04	1.760E-05
U-238	∑DOSE(j)		1.591E-03	1.590E-03	1.586E-03	1.582E-03	1.547E-03	1.249E-03	1.880E-04	1.761E-05
U-234	U-238	1.599E-03	8.862E-12	5.148E-11	5.909E-10	2.076E-09	4.283E-08	7.513E-08	5.526E-08	1.001E-08
U-234	U-238	3.039E-11	1.684E-19	9.781E-19	1.123E-17	3.944E-17	8.138E-16	1.427E-15	1.050E-15	1.902E-16
U-234	U-238	3.359E-07	1.861E-15	1.081E-14	1.241E-13	4.360E-13	8.997E-12	1.578E-11	1.161E-11	2.103E-12
U-234	U-238	4.434E-13	2.457E-21	1.427E-20	1.638E-19	5.756E-19	1.188E-17	2.083E-17	1.532E-17	2.775E-18
U-234	U-238	6.383E-15	3.537E-23	2.054E-22	2.358E-21	8.285E-21	1.709E-19	2.998E-19	2.205E-19	3.995E-20
U-234	U-238	3.196E-07	1.771E-15	1.029E-14	1.181E-13	4.149E-13	8.560E-12	1.501E-11	1.104E-11	2.000E-12
U-234	U-238	4.219E-13	2.338E-21	1.358E-20	1.559E-19	5.476E-19	1.130E-17	1.982E-17	1.458E-17	2.641E-18
U-234	U-238	6.073E-15	3.365E-23	1.955E-22	2.244E-21	7.882E-21	1.626E-19	2.852E-19	2.098E-19	3.801E-20
U-234	U-238	6.713E-11	3.720E-19	2.161E-18	2.480E-17	8.714E-17	1.798E-15	3.153E-15	2.319E-15	4.202E-16
U-234	U-238	8.862E-17	4.910E-25	2.852E-24	3.274E-23	1.150E-22	2.373E-21	4.162E-21	3.062E-21	5.546E-22
U-234	U-238	1.276E-18	7.068E-27	4.105E-26	4.713E-25	1.656E-24	3.416E-23	5.991E-23	4.407E-23	7.983E-24
U-234	U-238	3.200E-10	1.773E-18	1.030E-17	1.182E-16	4.154E-16	8.570E-15	1.503E-14	1.106E-14	2.003E-15
U-234	U-238	4.224E-16	2.341E-24	1.360E-23	1.561E-22	5.483E-22	1.131E-20	1.984E-20	1.459E-20	2.644E-21
U-234	U-238	6.080E-18	3.369E-26	1.957E-25	2.246E-24	7.892E-24	1.628E-22	2.856E-22	2.101E-22	3.805E-23
U-234	U-238	9.980E-01	5.530E-09	3.212E-08	3.687E-07	1.295E-06	2.673E-05	4.688E-05	3.448E-05	6.246E-06
U-234	U-238	1.317E-06	7.300E-15	4.240E-14	4.867E-13	1.710E-12	3.528E-11	6.188E-11	4.551E-11	8.245E-12
U-234	U-238	1.896E-08	1.051E-16	6.103E-16	7.006E-15	2.461E-14	5.078E-13	8.907E-13	6.551E-13	1.187E-13
U-234	U-238	2.096E-04	1.162E-12	6.747E-12	7.745E-11	2.721E-10	5.614E-09	9.846E-09	7.243E-09	1.312E-09
U-234	U-238	2.767E-10	1.533E-18	8.906E-18	1.022E-16	3.592E-16	7.411E-15	1.300E-14	9.560E-15	1.732E-15
U-234	U-238	3.983E-12	2.207E-20	1.282E-19	1.472E-18	5.170E-18	1.067E-16	1.871E-16	1.376E-16	2.493E-17
U-234	U-238	1.994E-04	1.105E-12	6.419E-12	7.369E-11	2.589E-10	5.341E-09	9.368E-09	6.891E-09	1.248E-09
U-234	U-238	2.633E-10	1.459E-18	8.473E-18	9.727E-17	3.417E-16	7.051E-15	1.237E-14	9.096E-15	1.648E-15
U-234	U-238	3.789E-12	2.100E-20	1.220E-19	1.400E-18	4.918E-18	1.015E-16	1.780E-16	1.309E-16	2.372E-17
U-234	U-238	4.189E-08	2.321E-16	1.348E-15	1.548E-14	5.437E-14	1.122E-12	1.968E-12	1.447E-12	2.622E-13
U-234	U-238	5.530E-14	3.064E-22	1.780E-21	2.043E-20	7.177E-20	1.481E-18	2.597E-18	1.910E-18	3.461E-19
U-234	U-238	7.959E-16	4.410E-24	2.562E-23	2.941E-22	1.033E-21	2.132E-20	3.739E-20	2.750E-20	4.982E-21
U-234	U-238	1.997E-07	1.106E-15	6.427E-15	7.378E-14	2.592E-13	5.348E-12	9.379E-12	6.899E-12	1.250E-12
U-234	U-238	2.636E-13	1.461E-21	8.483E-21	9.738E-20	3.421E-19	7.059E-18	1.238E-17	9.107E-18	1.650E-18
U-234	U-238	3.794E-15	2.102E-23	1.221E-22	1.402E-21	4.924E-21	1.016E-19	1.782E-19	1.311E-19	2.375E-20
U-234	∑DOSE(j)		5.541E-09	3.219E-08	3.695E-07	1.298E-06	2.678E-05	4.697E-05	3.455E-05	6.259E-06
Th-230	U-238	1.599E-03	9.477E-17	4.497E-16	4.349E-15	1.446E-14	2.820E-13	9.630E-13	7.916E-12	1.096E-11
Th-230	U-238	3.039E-11	1.801E-24	8.545E-24	8.264E-23	2.747E-22	5.357E-21	1.830E-20	1.504E-19	2.083E-19
Th-230	U-238	3.359E-07	1.990E-20	9.446E-20	9.135E-19	3.037E-18	5.922E-17	2.023E-16	1.663E-15	2.303E-15
Th-230	U-238	4.434E-13	2.627E-26	1.247E-25	1.206E-24	4.009E-24	7.818E-23	2.670E-22	2.195E-21	3.040E-21
Th-230	U-238	6.383E-15	3.782E-28	1.795E-27	1.736E-26	5.771E-26	1.125E-24	3.843E-24	3.159E-23	4.376E-23
Th-230	U-238	3.196E-07	1.894E-20	8.987E-20	8.692E-19	2.890E-18	5.635E-17	1.924E-16	1.582E-15	2.191E-15
Th-230	U-238	4.219E-13	2.500E-26	1.186E-25	1.147E-24	3.814E-24	7.438E-23	2.540E-22	2.088E-21	2.892E-21
Th-230	U-238	6.073E-15	3.598E-28	1.708E-27	1.651E-26	5.490E-26	1.071E-24	3.656E-24	3.006E-23	4.163E-23
Th-230	U-238	6.713E-11	3.978E-24	1.888E-23	1.826E-22	6.069E-22	1.184E-20	4.042E-20	3.323E-19	4.602E-19
Th-230	U-238	8.862E-17	4.626E-30	2.456E-29	2.410E-28	8.012E-28	1.562E-26	5.336E-26	4.386E-25	6.075E-25
Th-230	U-238	1.276E-18	0.000E+00	0.000E+00	2.840E-30	1.130E-29	2.249E-28	7.680E-28	6.314E-27	8.745E-27
Th-230	U-238	3.200E-10	1.896E-23	8.998E-23	8.702E-22	2.893E-21	5.642E-20	1.927E-19	1.584E-18	2.194E-18

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Individual Nuclide Dose Summed Over All Pathways

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	2.478E-29	1.188E-28	1.149E-27	3.819E-27	7.447E-26	2.543E-25	2.091E-24	2.896E-24
Th-230	U-238	6.080E-18	0.000E+00	7.797E-31	1.622E-29	5.497E-29	1.072E-27	3.661E-27	3.009E-26	4.168E-26
Th-230	U-238	9.980E-01	5.913E-14	2.806E-13	2.714E-12	9.023E-12	1.759E-10	6.009E-10	4.940E-09	6.842E-09
Th-230	U-238	1.317E-06	7.806E-20	3.704E-19	3.582E-18	1.191E-17	2.322E-16	7.932E-16	6.521E-15	9.031E-15
Th-230	U-238	1.896E-08	1.124E-21	5.332E-21	5.157E-20	1.714E-19	3.343E-18	1.142E-17	9.386E-17	1.300E-16
Th-230	U-238	2.096E-04	1.242E-17	5.894E-17	5.701E-16	1.895E-15	3.696E-14	1.262E-13	1.038E-12	1.437E-12
Th-230	U-238	2.767E-10	1.640E-23	7.781E-23	7.525E-22	2.502E-21	4.878E-20	1.666E-19	1.370E-18	1.897E-18
Th-230	U-238	3.983E-12	2.360E-25	1.120E-24	1.083E-23	3.601E-23	7.022E-22	2.398E-21	1.971E-20	2.730E-20
Th-230	U-238	1.994E-04	1.182E-17	5.608E-17	5.424E-16	1.803E-15	3.516E-14	1.201E-13	9.872E-13	1.367E-12
Th-230	U-238	2.633E-10	1.560E-23	7.403E-23	7.159E-22	2.380E-21	4.641E-20	1.585E-19	1.303E-18	1.805E-18
Th-230	U-238	3.789E-12	2.245E-25	1.066E-24	1.030E-23	3.426E-23	6.680E-22	2.282E-21	1.876E-20	2.598E-20
Th-230	U-238	4.189E-08	2.482E-21	1.178E-20	1.139E-19	3.787E-19	7.385E-18	2.522E-17	2.073E-16	2.872E-16
Th-230	U-238	5.530E-14	3.276E-27	1.555E-26	1.504E-25	4.999E-25	9.749E-24	3.330E-23	2.737E-22	3.791E-22
Th-230	U-238	7.959E-16	4.670E-29	2.238E-28	2.164E-27	7.196E-27	1.403E-25	4.792E-25	3.940E-24	5.457E-24
Th-230	U-238	1.997E-07	1.183E-20	5.615E-20	5.430E-19	1.805E-18	3.520E-17	1.202E-16	9.884E-16	1.369E-15
Th-230	U-238	2.636E-13	1.562E-26	7.411E-26	7.168E-25	2.383E-24	4.647E-23	1.587E-22	1.305E-21	1.807E-21
Th-230	U-238	3.794E-15	2.248E-28	1.067E-27	1.032E-26	3.430E-26	6.689E-25	2.284E-24	1.878E-23	2.601E-23
Th-230	∑DOSE(j)		5.925E-14	2.812E-13	2.719E-12	9.041E-12	1.763E-10	6.021E-10	4.950E-09	6.856E-09
U-238	U-238	2.111E-09	2.101E-09	2.099E-09	2.094E-09	2.088E-09	2.042E-09	1.648E-09	2.482E-10	2.324E-11
U-238	U-238	3.039E-11	3.024E-11	3.022E-11	3.014E-11	3.005E-11	2.939E-11	2.372E-11	3.572E-12	3.345E-13
U-238	∑DOSE(j)		2.131E-09	2.130E-09	2.124E-09	2.118E-09	2.071E-09	1.672E-09	2.518E-10	2.357E-11
U-234	U-238	2.111E-09	1.170E-17	6.795E-17	7.800E-16	2.740E-15	5.654E-14	9.917E-14	7.294E-14	1.321E-14
Th-230	U-238	2.111E-09	1.251E-22	5.936E-22	5.741E-21	1.909E-20	3.722E-19	1.271E-18	1.045E-17	1.447E-17
U-238	U-238	3.359E-07	3.343E-07	3.341E-07	3.332E-07	3.322E-07	3.249E-07	2.622E-07	3.949E-08	3.698E-09
U-238	U-238	4.434E-13	4.412E-13	4.410E-13	4.399E-13	4.385E-13	4.288E-13	3.462E-13	5.213E-14	4.881E-15
U-238	∑DOSE(j)		3.343E-07	3.341E-07	3.332E-07	3.322E-07	3.249E-07	2.622E-07	3.949E-08	3.698E-09
Ra-226	U-238	3.359E-07	1.809E-18	5.395E-18	2.178E-17	4.070E-17	3.838E-16	1.905E-15	8.377E-14	2.677E-13
Ra-226	U-238	4.434E-13	2.388E-24	7.122E-24	2.875E-23	5.373E-23	5.066E-22	2.515E-21	1.106E-19	3.533E-19
Ra-226	U-238	6.383E-15	3.438E-26	1.025E-25	4.138E-25	7.733E-25	7.292E-24	3.620E-23	1.592E-21	5.086E-21
Ra-226	U-238	2.096E-04	1.129E-15	3.367E-15	1.359E-14	2.540E-14	2.395E-13	1.189E-12	5.227E-11	1.670E-10
Ra-226	U-238	2.767E-10	1.490E-21	4.444E-21	1.794E-20	3.352E-20	3.161E-19	1.569E-18	6.900E-17	2.205E-16
Ra-226	U-238	3.983E-12	2.145E-23	6.397E-23	2.582E-22	4.825E-22	4.550E-21	2.259E-20	9.932E-19	3.174E-18
Ra-226	∑DOSE(j)		1.131E-15	3.372E-15	1.361E-14	2.544E-14	2.399E-13	1.191E-12	5.236E-11	1.673E-10
U-238	U-238	6.383E-15	6.351E-15	6.347E-15	6.331E-15	6.312E-15	6.173E-15	4.983E-15	7.503E-16	7.026E-17
U-238	U-238	3.196E-07	3.180E-07	3.178E-07	3.170E-07	3.161E-07	3.091E-07	2.495E-07	3.757E-08	3.518E-09
U-238	∑DOSE(j)		3.180E-07	3.178E-07	3.170E-07	3.161E-07	3.091E-07	2.495E-07	3.757E-08	3.518E-09
U-238	U-238	4.219E-13	4.198E-13	4.195E-13	4.185E-13	4.172E-13	4.080E-13	3.293E-13	4.960E-14	4.644E-15
U-238	U-238	6.073E-15	6.043E-15	6.039E-15	6.024E-15	6.006E-15	5.873E-15	4.740E-15	7.139E-16	6.684E-17
U-238	∑DOSE(j)		4.258E-13	4.256E-13	4.245E-13	4.232E-13	4.139E-13	3.341E-13	5.031E-14	4.711E-15
U-238	U-238	6.713E-11	6.680E-11	6.676E-11	6.659E-11	6.639E-11	6.493E-11	5.241E-11	7.892E-12	7.389E-13
U-238	U-238	8.862E-17	8.818E-17	8.812E-17	8.790E-17	8.764E-17	8.570E-17	6.918E-17	1.042E-17	9.754E-19
U-238	∑DOSE(j)		6.680E-11	6.676E-11	6.659E-11	6.639E-11	6.493E-11	5.241E-11	7.892E-12	7.389E-13

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	3.614E-22	1.078E-21	4.347E-21	8.108E-21	7.454E-20	3.657E-19	1.598E-17	5.105E-17
Ra-226	U-238	8.862E-17	4.769E-28	1.422E-27	5.738E-27	1.070E-26	9.839E-26	4.827E-25	2.109E-23	6.738E-23
Ra-226	U-238	1.276E-18	6.864E-30	2.045E-29	8.260E-29	1.540E-28	1.416E-27	6.948E-27	3.036E-25	9.699E-25
Ra-226	U-238	4.189E-08	2.255E-19	6.724E-19	2.713E-18	5.060E-18	4.651E-17	2.282E-16	9.971E-15	3.185E-14
Ra-226	U-238	5.530E-14	2.977E-25	8.876E-25	3.581E-24	6.679E-24	6.139E-23	3.012E-22	1.316E-20	4.205E-20
Ra-226	U-238	7.959E-16	4.284E-27	1.278E-26	5.154E-26	9.613E-26	8.837E-25	4.336E-24	1.894E-22	6.052E-22
Ra-226	∑DOSE(j)		2.259E-19	6.735E-19	2.717E-18	5.068E-18	4.659E-17	2.286E-16	9.987E-15	3.191E-14
U-238	U-238	1.276E-18	1.269E-18	1.268E-18	1.265E-18	1.261E-18	1.234E-18	9.957E-19	1.499E-19	1.404E-20
U-238	U-238	3.200E-10	3.184E-10	3.182E-10	3.174E-10	3.165E-10	3.095E-10	2.498E-10	3.762E-11	3.522E-12
U-238	∑DOSE(j)		3.184E-10	3.182E-10	3.174E-10	3.165E-10	3.095E-10	2.498E-10	3.762E-11	3.522E-12
U-238	U-238	4.224E-16	4.203E-16	4.200E-16	4.190E-16	4.177E-16	4.085E-16	3.297E-16	4.966E-17	4.649E-18
U-238	U-238	6.080E-18	6.050E-18	6.046E-18	6.031E-18	6.013E-18	5.880E-18	4.746E-18	7.148E-19	6.692E-20
U-238	∑DOSE(j)		4.264E-16	4.261E-16	4.250E-16	4.237E-16	4.144E-16	3.345E-16	5.037E-17	4.716E-18
U-238	U-238	9.980E-01	2.069E-02	2.461E-02	4.013E-02	5.911E-02	1.957E-01	1.712E-01	2.534E-02	2.304E-03
U-238	U-238	1.317E-06	2.731E-08	3.249E-08	5.297E-08	7.802E-08	2.583E-07	2.260E-07	3.345E-08	3.042E-09
U-238	∑DOSE(j)		2.069E-02	2.461E-02	4.013E-02	5.911E-02	1.957E-01	1.712E-01	2.534E-02	2.304E-03
U-238	U-238	1.896E-08	3.931E-10	4.676E-10	7.624E-10	1.123E-09	3.718E-09	3.253E-09	4.815E-10	4.378E-11
U-238	U-238	2.096E-04	4.346E-06	5.170E-06	8.428E-06	1.241E-05	4.110E-05	3.596E-05	5.323E-06	4.840E-07
U-238	∑DOSE(j)		4.346E-06	5.170E-06	8.429E-06	1.242E-05	4.111E-05	3.596E-05	5.323E-06	4.840E-07
U-238	U-238	2.767E-10	5.736E-12	6.824E-12	1.113E-11	1.639E-11	5.426E-11	4.747E-11	7.026E-12	6.389E-13
U-238	U-238	3.983E-12	8.257E-14	9.823E-14	1.601E-13	2.359E-13	7.810E-13	6.833E-13	1.011E-13	9.196E-15
U-238	∑DOSE(j)		5.819E-12	6.922E-12	1.129E-11	1.662E-11	5.504E-11	4.815E-11	7.127E-12	6.481E-13
U-238	U-238	1.994E-04	4.135E-06	4.919E-06	8.019E-06	1.181E-05	3.911E-05	3.421E-05	5.064E-06	4.605E-07
U-238	U-238	2.633E-10	5.458E-12	6.493E-12	1.058E-11	1.559E-11	5.162E-11	4.516E-11	6.685E-12	6.078E-13
U-238	∑DOSE(j)		4.135E-06	4.919E-06	8.019E-06	1.181E-05	3.911E-05	3.421E-05	5.064E-06	4.605E-07
U-238	U-238	3.789E-12	7.856E-14	9.345E-14	1.524E-13	2.244E-13	7.430E-13	6.501E-13	9.622E-14	8.749E-15
U-238	U-238	4.189E-08	8.685E-10	1.033E-09	1.684E-09	2.481E-09	8.214E-09	7.187E-09	1.064E-09	9.672E-11
U-238	∑DOSE(j)		8.685E-10	1.033E-09	1.684E-09	2.481E-09	8.215E-09	7.187E-09	1.064E-09	9.673E-11
U-238	U-238	5.530E-14	1.146E-15	1.364E-15	2.223E-15	3.275E-15	1.084E-14	9.486E-15	1.404E-15	1.277E-16
U-238	U-238	7.959E-16	1.650E-17	1.963E-17	3.200E-17	4.714E-17	1.561E-16	1.365E-16	2.021E-17	1.838E-18
U-238	∑DOSE(j)		1.163E-15	1.383E-15	2.255E-15	3.322E-15	1.100E-14	9.623E-15	1.424E-15	1.295E-16
U-238	U-238	1.997E-07	4.140E-09	4.925E-09	8.029E-09	1.183E-08	3.915E-08	3.426E-08	5.070E-09	4.610E-10
U-238	U-238	2.636E-13	5.464E-15	6.501E-15	1.060E-14	1.561E-14	5.168E-14	4.522E-14	6.693E-15	6.086E-16
U-238	∑DOSE(j)		4.140E-09	4.925E-09	8.029E-09	1.183E-08	3.915E-08	3.426E-08	5.070E-09	4.610E-10
U-238	U-238	3.794E-15	7.865E-17	9.357E-17	1.525E-16	2.247E-16	7.439E-16	6.509E-16	9.634E-17	8.760E-18

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

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
		t=	0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Cs-137	Cs-137	1.000E+00	1.330E+00	1.299E+00	1.184E+00	1.054E+00	4.156E-01	1.298E-01	1.180E-05	1.046E-10
Ra-226	Ra-226	9.996E-01	6.497E-01	6.493E-01	6.478E-01	6.459E-01	6.307E-01	6.122E-01	4.825E-01	3.584E-01
Ra-226	Ra-226	1.319E-06	8.576E-07	8.571E-07	8.551E-07	8.526E-07	8.325E-07	8.081E-07	6.369E-07	4.730E-07
Ra-226	U-238	1.599E-03	0.000E+00	1.914E-18	2.369E-16	1.871E-15	2.118E-13	1.500E-12	7.711E-11	2.478E-10
Ra-226	U-238	2.111E-09	0.000E+00	2.526E-24	3.126E-22	2.470E-21	2.796E-19	1.980E-18	1.018E-16	3.271E-16
Ra-226	U-238	3.039E-11	0.000E+00	3.636E-26	4.500E-24	3.555E-23	4.024E-21	2.850E-20	1.465E-18	4.709E-18
Ra-226	U-238	9.980E-01	0.000E+00	1.194E-15	1.478E-13	1.168E-12	1.322E-10	9.359E-10	4.812E-08	1.546E-07
Ra-226	U-238	1.317E-06	0.000E+00	1.576E-21	1.951E-19	1.541E-18	1.744E-16	1.235E-15	6.351E-14	2.041E-13
Ra-226	U-238	1.896E-08	0.000E+00	2.269E-23	2.808E-21	2.219E-20	2.511E-18	1.778E-17	9.142E-16	2.938E-15
Ra-226	∑S(j):		6.497E-01	6.493E-01	6.478E-01	6.459E-01	6.307E-01	6.122E-01	4.825E-01	3.584E-01
Pb-210	Ra-226	9.996E-01	0.000E+00	1.996E-02	9.358E-02	1.730E-01	4.963E-01	5.818E-01	4.793E-01	3.559E-01
Pb-210	Ra-226	2.100E-04	0.000E+00	4.192E-06	1.966E-05	3.635E-05	1.042E-04	1.222E-04	1.007E-04	7.476E-05
Pb-210	Ra-226	1.998E-04	0.000E+00	3.989E-06	1.870E-05	3.458E-05	9.919E-05	1.163E-04	9.577E-05	7.113E-05
Pb-210	Ra-226	4.196E-08	0.000E+00	8.378E-10	3.928E-09	7.263E-09	2.083E-08	2.442E-08	2.012E-08	1.494E-08
Pb-210	Ra-226	2.000E-07	0.000E+00	3.993E-09	1.872E-08	3.462E-08	9.931E-08	1.164E-07	9.589E-08	7.121E-08
Pb-210	U-238	1.599E-03	0.000E+00	1.485E-20	8.978E-18	1.378E-16	6.317E-14	7.149E-13	6.625E-11	2.312E-10
Pb-210	U-238	3.359E-07	0.000E+00	3.120E-24	1.886E-21	2.895E-20	1.327E-17	1.502E-16	1.392E-14	4.855E-14
Pb-210	U-238	3.196E-07	0.000E+00	2.968E-24	1.794E-21	2.755E-20	1.262E-17	1.429E-16	1.324E-14	4.620E-14
Pb-210	U-238	6.713E-11	0.000E+00	6.234E-28	3.768E-25	5.786E-24	2.652E-21	3.001E-20	2.781E-18	9.703E-18
Pb-210	U-238	3.200E-10	0.000E+00	2.972E-27	1.796E-24	2.758E-23	1.264E-20	1.430E-19	1.326E-17	4.625E-17
Pb-210	U-238	9.980E-01	0.000E+00	9.268E-18	5.602E-15	8.602E-14	3.942E-11	4.461E-10	4.134E-08	1.442E-07
Pb-210	U-238	2.096E-04	0.000E+00	1.947E-21	1.177E-18	1.807E-17	8.280E-15	9.370E-14	8.683E-12	3.030E-11
Pb-210	U-238	1.994E-04	0.000E+00	1.852E-21	1.120E-18	1.719E-17	7.878E-15	8.915E-14	8.261E-12	2.883E-11
Pb-210	U-238	4.189E-08	0.000E+00	3.890E-25	2.351E-22	3.611E-21	1.655E-18	1.873E-17	1.735E-15	6.055E-15
Pb-210	U-238	1.997E-07	0.000E+00	1.854E-24	1.121E-21	1.721E-20	7.887E-18	8.926E-17	8.271E-15	2.886E-14
Pb-210	∑S(j):		0.000E+00	1.997E-02	9.362E-02	1.731E-01	4.965E-01	5.821E-01	4.795E-01	3.561E-01
Pb-210	Ra-226	1.319E-06	0.000E+00	2.635E-08	1.235E-07	2.284E-07	6.551E-07	7.680E-07	6.326E-07	4.698E-07
Pb-210	Ra-226	1.899E-08	0.000E+00	3.792E-10	1.778E-09	3.288E-09	9.430E-09	1.105E-08	9.106E-09	6.763E-09
Pb-210	Ra-226	2.771E-10	0.000E+00	5.534E-12	2.595E-11	4.798E-11	1.376E-10	1.613E-10	1.329E-10	9.868E-11
Pb-210	Ra-226	2.637E-10	0.000E+00	5.265E-12	2.469E-11	4.565E-11	1.309E-10	1.535E-10	1.264E-10	9.389E-11
Pb-210	Ra-226	5.538E-14	0.000E+00	1.106E-15	5.185E-15	9.588E-15	2.750E-14	3.224E-14	2.655E-14	1.972E-14
Pb-210	Ra-226	2.640E-13	0.000E+00	5.271E-15	2.472E-14	4.570E-14	1.311E-13	1.537E-13	1.266E-13	9.400E-14
Pb-210	U-238	2.111E-09	0.000E+00	1.960E-26	1.185E-23	1.820E-22	8.339E-20	9.437E-19	8.745E-17	3.051E-16
Pb-210	U-238	4.434E-13	0.000E+00	4.118E-30	2.489E-27	3.822E-26	1.752E-23	1.982E-22	1.837E-20	6.409E-20
Pb-210	U-238	4.219E-13	0.000E+00	3.918E-30	2.368E-27	3.636E-26	1.666E-23	1.886E-22	1.748E-20	6.098E-20
Pb-210	U-238	8.862E-17	0.000E+00	8.229E-34	4.974E-31	7.638E-30	3.500E-27	3.961E-26	3.671E-24	1.281E-23
Pb-210	U-238	4.224E-16	0.000E+00	3.923E-33	2.371E-30	3.641E-29	1.668E-26	1.888E-25	1.750E-23	6.105E-23
Pb-210	U-238	1.317E-06	0.000E+00	1.223E-23	7.395E-21	1.135E-19	5.203E-17	5.889E-16	5.457E-14	1.904E-13
Pb-210	U-238	2.767E-10	0.000E+00	2.570E-27	1.553E-24	2.385E-23	1.093E-20	1.237E-19	1.146E-17	3.999E-17
Pb-210	U-238	2.633E-10	0.000E+00	2.445E-27	1.478E-24	2.269E-23	1.040E-20	1.177E-19	1.090E-17	3.805E-17
Pb-210	U-238	5.530E-14	0.000E+00	5.135E-31	3.104E-28	4.766E-27	2.184E-24	2.472E-23	2.291E-21	7.992E-21
Pb-210	U-238	2.636E-13	0.000E+00	2.448E-30	1.480E-27	2.272E-26	1.041E-23	1.178E-22	1.092E-20	3.810E-20
Pb-210	∑S(j):		0.000E+00	2.674E-08	1.254E-07	2.318E-07	6.648E-07	7.794E-07	6.420E-07	4.768E-07
Ra-226	Ra-226	1.899E-08	1.234E-08	1.234E-08	1.231E-08	1.227E-08	1.198E-08	1.163E-08	9.168E-09	6.809E-09
Ra-226	Ra-226	2.100E-04	1.365E-04	1.364E-04	1.361E-04	1.357E-04	1.325E-04	1.286E-04	1.014E-04	7.527E-05
Ra-226	∑S(j):		1.365E-04	1.364E-04	1.361E-04	1.357E-04	1.325E-04	1.286E-04	1.014E-04	7.528E-05

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	Ra-226	2.771E-10	1.801E-10	1.800E-10	1.796E-10	1.791E-10	1.749E-10	1.697E-10	1.338E-10	9.936E-11
Ra-226	Ra-226	3.989E-12	2.593E-12	2.591E-12	2.585E-12	2.578E-12	2.517E-12	2.443E-12	1.926E-12	1.430E-12
Ra-226	∑S(j):		1.827E-10	1.826E-10	1.822E-10	1.817E-10	1.774E-10	1.722E-10	1.357E-10	1.008E-10
Pb-210	Ra-226	3.989E-12	0.000E+00	7.965E-14	3.735E-13	6.906E-13	1.981E-12	2.322E-12	1.913E-12	1.420E-12
Pb-210	Ra-226	3.795E-12	0.000E+00	7.578E-14	3.553E-13	6.570E-13	1.885E-12	2.209E-12	1.820E-12	1.351E-12
Pb-210	Ra-226	7.972E-16	0.000E+00	1.592E-17	7.464E-17	1.380E-16	3.958E-16	4.640E-16	3.822E-16	2.839E-16
Pb-210	Ra-226	3.800E-15	0.000E+00	7.588E-17	3.558E-16	6.578E-16	1.887E-15	2.212E-15	1.822E-15	1.353E-15
Pb-210	U-238	3.039E-11	0.000E+00	2.822E-28	1.706E-25	2.619E-24	1.200E-21	1.358E-20	1.259E-18	4.392E-18
Pb-210	U-238	6.383E-15	0.000E+00	5.927E-32	3.583E-29	5.501E-28	2.521E-25	2.853E-24	2.644E-22	9.225E-22
Pb-210	U-238	6.073E-15	0.000E+00	5.639E-32	3.409E-29	5.234E-28	2.399E-25	2.715E-24	2.515E-22	8.777E-22
Pb-210	U-238	1.276E-18	0.000E+00	1.184E-35	7.160E-33	1.099E-31	5.038E-29	5.702E-28	5.284E-26	1.844E-25
Pb-210	U-238	6.080E-18	0.000E+00	5.646E-35	3.413E-32	5.240E-31	2.402E-28	2.718E-27	2.518E-25	8.788E-25
Pb-210	U-238	1.896E-08	0.000E+00	1.761E-25	1.064E-22	1.634E-21	7.490E-19	8.476E-18	7.854E-16	2.741E-15
Pb-210	U-238	3.983E-12	0.000E+00	3.699E-29	2.236E-26	3.433E-25	1.573E-22	1.780E-21	1.650E-19	5.757E-19
Pb-210	U-238	3.789E-12	0.000E+00	3.519E-29	2.127E-26	3.266E-25	1.497E-22	1.694E-21	1.570E-19	5.477E-19
Pb-210	U-238	7.959E-16	0.000E+00	7.391E-33	4.468E-30	6.860E-29	3.144E-26	3.558E-25	3.297E-23	1.150E-22
Pb-210	U-238	3.794E-15	0.000E+00	3.523E-32	2.130E-29	3.270E-28	1.499E-25	1.696E-24	1.572E-22	5.484E-22
Pb-210	∑S(j):		0.000E+00	1.555E-13	7.292E-13	1.348E-12	3.868E-12	4.534E-12	3.735E-12	2.776E-12
Ra-226	Ra-226	1.998E-04	1.298E-04	1.298E-04	1.295E-04	1.291E-04	1.260E-04	1.223E-04	9.643E-05	7.161E-05
Ra-226	Ra-226	2.637E-10	1.714E-10	1.713E-10	1.709E-10	1.704E-10	1.664E-10	1.615E-10	1.273E-10	9.453E-11
Ra-226	U-238	3.196E-07	0.000E+00	3.825E-22	4.733E-20	3.739E-19	4.232E-17	2.997E-16	1.541E-14	4.953E-14
Ra-226	U-238	4.219E-13	0.000E+00	5.049E-28	6.248E-26	4.936E-25	5.587E-23	3.956E-22	2.034E-20	6.537E-20
Ra-226	U-238	6.073E-15	0.000E+00	7.267E-30	8.993E-28	7.105E-27	8.042E-25	5.695E-24	2.928E-22	9.410E-22
Ra-226	U-238	1.994E-04	0.000E+00	2.387E-19	2.954E-17	2.333E-16	2.641E-14	1.870E-13	9.616E-12	3.090E-11
Ra-226	U-238	2.633E-10	0.000E+00	3.150E-25	3.899E-23	3.080E-22	3.486E-20	2.469E-19	1.269E-17	4.079E-17
Ra-226	U-238	3.789E-12	0.000E+00	4.535E-27	5.612E-25	4.434E-24	5.018E-22	3.554E-21	1.827E-19	5.872E-19
Ra-226	∑S(j):		1.298E-04	1.298E-04	1.295E-04	1.291E-04	1.260E-04	1.223E-04	9.643E-05	7.161E-05
Ra-226	Ra-226	3.795E-12	2.467E-12	2.466E-12	2.460E-12	2.452E-12	2.395E-12	2.324E-12	1.832E-12	1.361E-12
Ra-226	Ra-226	4.196E-08	2.727E-08	2.726E-08	2.719E-08	2.711E-08	2.647E-08	2.570E-08	2.025E-08	1.504E-08
Ra-226	∑S(j):		2.728E-08	2.726E-08	2.719E-08	2.711E-08	2.648E-08	2.570E-08	2.026E-08	1.504E-08
Ra-226	Ra-226	5.538E-14	3.600E-14	3.598E-14	3.589E-14	3.579E-14	3.494E-14	3.392E-14	2.674E-14	1.986E-14
Ra-226	Ra-226	7.972E-16	5.182E-16	5.179E-16	5.166E-16	5.151E-16	5.030E-16	4.882E-16	3.848E-16	2.858E-16
Ra-226	∑S(j):		3.652E-14	3.650E-14	3.641E-14	3.630E-14	3.545E-14	3.441E-14	2.712E-14	2.014E-14
Ra-226	Ra-226	2.000E-07	1.300E-07	1.299E-07	1.296E-07	1.292E-07	1.262E-07	1.225E-07	9.655E-08	7.170E-08
Ra-226	Ra-226	2.640E-13	1.716E-13	1.715E-13	1.711E-13	1.706E-13	1.666E-13	1.617E-13	1.274E-13	9.464E-14
Ra-226	U-238	3.200E-10	0.000E+00	3.829E-25	4.739E-23	3.744E-22	4.238E-20	3.001E-19	1.543E-17	4.959E-17
Ra-226	U-238	4.224E-16	0.000E+00	5.055E-31	6.255E-29	4.942E-28	5.594E-26	3.961E-25	2.037E-23	6.545E-23
Ra-226	U-238	6.080E-18	0.000E+00	7.276E-33	9.004E-31	7.114E-30	8.051E-28	5.702E-27	2.931E-25	9.421E-25
Ra-226	U-238	1.997E-07	0.000E+00	2.390E-22	2.957E-20	2.336E-19	2.644E-17	1.873E-16	9.627E-15	3.094E-14
Ra-226	U-238	2.636E-13	0.000E+00	3.154E-28	3.903E-26	3.084E-25	3.490E-23	2.472E-22	1.271E-20	4.084E-20
Ra-226	U-238	3.794E-15	0.000E+00	4.540E-30	5.619E-28	4.439E-27	5.024E-25	3.558E-24	1.829E-22	5.879E-22
Ra-226	∑S(j):		1.300E-07	1.299E-07	1.296E-07	1.292E-07	1.262E-07	1.225E-07	9.655E-08	7.170E-08
Ra-226	Ra-226	3.800E-15	2.470E-15	2.469E-15	2.463E-15	2.455E-15	2.398E-15	2.327E-15	1.834E-15	1.362E-15

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

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Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Sr-90	Sr-90	1.000E+00	3.300E-01	3.140E-01	2.572E-01	2.005E-01	2.734E-02	2.265E-03	5.030E-12	7.667E-23
U-238	U-238	5.450E-07	3.488E-07	3.472E-07	3.407E-07	3.327E-07	2.755E-07	2.175E-07	3.292E-08	3.107E-09
U-238	U-238	1.599E-03	1.024E-03	1.019E-03	9.997E-04	9.764E-04	8.084E-04	6.384E-04	9.661E-05	9.119E-06
U-238	∑S(j):		1.024E-03	1.019E-03	1.000E-03	9.767E-04	8.086E-04	6.386E-04	9.664E-05	9.122E-06
U-234	U-238	1.599E-03	0.000E+00	2.876E-09	1.411E-08	2.757E-08	1.141E-07	1.802E-07	1.363E-07	2.571E-08
U-234	U-238	3.039E-11	0.000E+00	5.465E-17	2.681E-16	5.238E-16	2.168E-15	3.424E-15	2.590E-15	4.885E-16
U-234	U-238	3.359E-07	0.000E+00	6.042E-13	2.964E-12	5.790E-12	2.397E-11	3.786E-11	2.863E-11	5.400E-12
U-234	U-238	4.434E-13	0.000E+00	7.975E-19	3.913E-18	7.643E-18	3.164E-17	4.997E-17	3.779E-17	7.128E-18
U-234	U-238	6.383E-15	0.000E+00	1.148E-20	5.632E-20	1.100E-19	4.554E-19	7.192E-19	5.439E-19	1.026E-19
U-234	U-238	3.196E-07	0.000E+00	5.748E-13	2.820E-12	5.509E-12	2.280E-11	3.602E-11	2.724E-11	5.138E-12
U-234	U-238	4.219E-13	0.000E+00	7.588E-19	3.723E-18	7.272E-18	3.010E-17	4.754E-17	3.595E-17	6.782E-18
U-234	U-238	6.073E-15	0.000E+00	1.092E-20	5.359E-20	1.047E-19	4.333E-19	6.843E-19	5.175E-19	9.762E-20
U-234	U-238	6.713E-11	0.000E+00	1.207E-16	5.924E-16	1.157E-15	4.790E-15	7.565E-15	5.721E-15	1.079E-15
U-234	U-238	8.862E-17	0.000E+00	1.594E-22	7.819E-22	1.527E-21	6.323E-21	9.986E-21	7.551E-21	1.424E-21
U-234	U-238	1.276E-18	0.000E+00	2.294E-24	1.126E-23	2.199E-23	9.101E-23	1.437E-22	1.087E-22	2.050E-23
U-234	U-238	3.200E-10	0.000E+00	5.755E-16	2.824E-15	5.516E-15	2.283E-14	3.606E-14	2.727E-14	5.144E-15
U-234	U-238	4.224E-16	0.000E+00	7.597E-22	3.727E-21	7.281E-21	3.014E-20	4.760E-20	3.600E-20	6.790E-21
U-234	U-238	6.080E-18	0.000E+00	1.093E-23	5.365E-23	1.048E-22	4.338E-22	6.851E-22	5.181E-22	9.774E-23
U-234	U-238	9.980E-01	0.000E+00	1.795E-06	8.806E-06	1.720E-05	7.120E-05	1.125E-04	8.505E-05	1.604E-05
U-234	U-238	1.317E-06	0.000E+00	2.369E-12	1.162E-11	2.271E-11	9.399E-11	1.484E-10	1.123E-10	2.118E-11
U-234	U-238	1.896E-08	0.000E+00	3.410E-14	1.673E-13	3.268E-13	1.353E-12	2.137E-12	1.616E-12	3.048E-13
U-234	U-238	2.096E-04	0.000E+00	3.770E-10	1.850E-09	3.613E-09	1.496E-08	2.362E-08	1.786E-08	3.370E-09
U-234	U-238	2.767E-10	0.000E+00	4.976E-16	2.442E-15	4.769E-15	1.974E-14	3.118E-14	2.358E-14	4.448E-15
U-234	U-238	3.983E-12	0.000E+00	7.163E-18	3.514E-17	6.865E-17	2.842E-16	4.488E-16	3.394E-16	6.402E-17
U-234	U-238	1.994E-04	0.000E+00	3.587E-10	1.760E-09	3.438E-09	1.423E-08	2.247E-08	1.700E-08	3.206E-09
U-234	U-238	2.633E-10	0.000E+00	4.735E-16	2.323E-15	4.538E-15	1.878E-14	2.967E-14	2.243E-14	4.232E-15
U-234	U-238	3.789E-12	0.000E+00	6.815E-18	3.344E-17	6.531E-17	2.704E-16	4.270E-16	3.229E-16	6.091E-17
U-234	U-238	4.189E-08	0.000E+00	7.534E-14	3.696E-13	7.220E-13	2.989E-12	4.721E-12	3.570E-12	6.734E-13
U-234	U-238	5.530E-14	0.000E+00	9.945E-20	4.879E-19	9.531E-19	3.945E-18	6.231E-18	4.712E-18	8.889E-19
U-234	U-238	7.959E-16	0.000E+00	1.431E-21	7.023E-21	1.372E-20	5.679E-20	8.969E-20	6.783E-20	1.279E-20
U-234	U-238	1.997E-07	0.000E+00	3.591E-13	1.762E-12	3.442E-12	1.425E-11	2.250E-11	1.702E-11	3.210E-12
U-234	U-238	2.636E-13	0.000E+00	4.740E-19	2.326E-18	4.543E-18	1.881E-17	2.970E-17	2.246E-17	4.237E-18
U-234	U-238	3.794E-15	0.000E+00	6.823E-21	3.348E-20	6.539E-20	2.707E-19	4.275E-19	3.233E-19	6.099E-20
U-234	∑S(j):		0.000E+00	1.798E-06	8.824E-06	1.724E-05	7.135E-05	1.127E-04	8.522E-05	1.608E-05
Th-230	U-238	1.599E-03	0.000E+00	1.325E-14	3.270E-13	1.288E-12	2.842E-11	9.756E-11	8.119E-10	1.124E-09
Th-230	U-238	3.039E-11	0.000E+00	2.517E-22	6.213E-21	2.446E-20	5.400E-19	1.854E-18	1.543E-17	2.135E-17
Th-230	U-238	3.359E-07	0.000E+00	2.782E-18	6.868E-17	2.704E-16	5.969E-15	2.049E-14	1.705E-13	2.360E-13
Th-230	U-238	4.434E-13	0.000E+00	3.672E-24	9.066E-23	3.570E-22	7.880E-21	2.705E-20	2.251E-19	3.116E-19
Th-230	U-238	6.383E-15	0.000E+00	5.286E-26	1.305E-24	5.139E-24	1.134E-22	3.894E-22	3.240E-21	4.485E-21
Th-230	U-238	3.196E-07	0.000E+00	2.647E-18	6.535E-17	2.573E-16	5.679E-15	1.950E-14	1.622E-13	2.246E-13
Th-230	U-238	4.219E-13	0.000E+00	3.494E-24	8.626E-23	3.396E-22	7.497E-21	2.574E-20	2.142E-19	2.964E-19
Th-230	U-238	6.073E-15	0.000E+00	5.029E-26	1.242E-24	4.889E-24	1.079E-22	3.705E-22	3.083E-21	4.267E-21
Th-230	U-238	6.713E-11	0.000E+00	5.560E-22	1.373E-20	5.405E-20	1.193E-18	4.095E-18	3.408E-17	4.717E-17
Th-230	U-238	8.862E-17	0.000E+00	7.339E-28	1.812E-26	7.134E-26	1.575E-24	5.406E-24	4.499E-23	6.226E-23
Th-230	U-238	1.276E-18	0.000E+00	1.056E-29	2.608E-28	1.027E-27	2.267E-26	7.781E-26	6.475E-25	8.962E-25
Th-230	U-238	3.200E-10	0.000E+00	2.650E-21	6.543E-20	2.576E-19	5.686E-18	1.952E-17	1.624E-16	2.248E-16

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-NO BKD SUB-C.RAD

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Th-230	U-238	4.224E-16	0.000E+00	3.498E-27	8.636E-26	3.401E-25	7.506E-24	2.577E-23	2.144E-22	2.968E-22
Th-230	U-238	6.080E-18	0.000E+00	5.035E-29	1.243E-27	4.895E-27	1.080E-25	3.709E-25	3.086E-24	4.272E-24
Th-230	U-238	9.980E-01	0.000E+00	8.265E-12	2.040E-10	8.034E-10	1.773E-08	6.088E-08	5.066E-07	7.012E-07
Th-230	U-238	1.317E-06	0.000E+00	1.091E-17	2.693E-16	1.061E-15	2.341E-14	8.036E-14	6.687E-13	9.256E-13
Th-230	U-238	1.896E-08	0.000E+00	1.570E-19	3.877E-18	1.527E-17	3.369E-16	1.157E-15	9.626E-15	1.332E-14
Th-230	U-238	2.096E-04	0.000E+00	1.736E-15	4.286E-14	1.688E-13	3.725E-12	1.279E-11	1.064E-10	1.473E-10
Th-230	U-238	2.767E-10	0.000E+00	2.292E-21	5.657E-20	2.228E-19	4.917E-18	1.688E-17	1.405E-16	1.944E-16
Th-230	U-238	3.983E-12	0.000E+00	3.298E-23	8.143E-22	3.206E-21	7.077E-20	2.430E-19	2.022E-18	2.798E-18
Th-230	U-238	1.994E-04	0.000E+00	1.652E-15	4.078E-14	1.606E-13	3.544E-12	1.217E-11	1.012E-10	1.401E-10
Th-230	U-238	2.633E-10	0.000E+00	2.180E-21	5.382E-20	2.119E-19	4.678E-18	1.606E-17	1.336E-16	1.850E-16
Th-230	U-238	3.789E-12	0.000E+00	3.138E-23	7.747E-22	3.051E-21	6.733E-20	2.312E-19	1.924E-18	2.662E-18
Th-230	U-238	4.189E-08	0.000E+00	3.469E-19	8.565E-18	3.372E-17	7.444E-16	2.555E-15	2.127E-14	2.943E-14
Th-230	U-238	5.530E-14	0.000E+00	4.579E-25	1.131E-23	4.452E-23	9.826E-22	3.373E-21	2.807E-20	3.885E-20
Th-230	U-238	7.959E-16	0.000E+00	6.592E-27	1.627E-25	6.408E-25	1.414E-23	4.855E-23	4.040E-22	5.592E-22
Th-230	U-238	1.997E-07	0.000E+00	1.654E-18	4.083E-17	1.608E-16	3.548E-15	1.218E-14	1.014E-13	1.403E-13
Th-230	U-238	2.636E-13	0.000E+00	2.183E-24	5.389E-23	2.122E-22	4.684E-21	1.608E-20	1.338E-19	1.852E-19
Th-230	U-238	3.794E-15	0.000E+00	3.142E-26	7.757E-25	3.054E-24	6.742E-23	2.314E-22	1.926E-21	2.666E-21
Th-230	∑S(j):		0.000E+00	8.282E-12	2.045E-10	8.051E-10	1.777E-08	6.100E-08	5.076E-07	7.026E-07
U-238	U-238	2.111E-09	1.351E-09	1.345E-09	1.320E-09	1.289E-09	1.067E-09	8.427E-10	1.275E-10	1.204E-11
U-238	U-238	3.039E-11	1.945E-11	1.936E-11	1.899E-11	1.855E-11	1.536E-11	1.213E-11	1.836E-12	1.733E-13
U-238	∑S(j):		1.371E-09	1.364E-09	1.339E-09	1.307E-09	1.082E-09	8.548E-10	1.294E-10	1.221E-11
U-234	U-238	2.111E-09	0.000E+00	3.797E-15	1.863E-14	3.639E-14	1.506E-13	2.379E-13	1.799E-13	3.394E-14
Th-230	U-238	2.111E-09	0.000E+00	1.748E-20	4.316E-19	1.700E-18	3.751E-17	1.288E-16	1.072E-15	1.483E-15
U-238	U-238	3.359E-07	2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
U-238	U-238	4.434E-13	2.838E-13	2.825E-13	2.772E-13	2.707E-13	2.241E-13	1.770E-13	2.679E-14	2.528E-15
U-238	∑S(j):		2.150E-07	2.140E-07	2.100E-07	2.051E-07	1.698E-07	1.341E-07	2.029E-08	1.915E-09
Ra-226	U-238	3.359E-07	0.000E+00	4.020E-22	4.975E-20	3.930E-19	4.449E-17	3.150E-16	1.620E-14	5.206E-14
Ra-226	U-238	4.434E-13	0.000E+00	5.307E-28	6.567E-26	5.188E-25	5.872E-23	4.158E-22	2.138E-20	6.871E-20
Ra-226	U-238	6.383E-15	0.000E+00	7.638E-30	9.452E-28	7.468E-27	8.452E-25	5.986E-24	3.077E-22	9.891E-22
Ra-226	U-238	2.096E-04	0.000E+00	2.509E-19	3.104E-17	2.453E-16	2.776E-14	1.966E-13	1.011E-11	3.248E-11
Ra-226	U-238	2.767E-10	0.000E+00	3.311E-25	4.098E-23	3.237E-22	3.664E-20	2.595E-19	1.334E-17	4.288E-17
Ra-226	U-238	3.983E-12	0.000E+00	4.766E-27	5.898E-25	4.660E-24	5.274E-22	3.735E-21	1.920E-19	6.172E-19
Ra-226	∑S(j):		0.000E+00	2.513E-19	3.109E-17	2.457E-16	2.780E-14	1.969E-13	1.012E-11	3.253E-11
U-238	U-238	6.383E-15	4.085E-15	4.066E-15	3.990E-15	3.897E-15	3.226E-15	2.548E-15	3.856E-16	3.639E-17
U-238	U-238	3.196E-07	2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	∑S(j):		2.046E-07	2.036E-07	1.998E-07	1.951E-07	1.615E-07	1.276E-07	1.931E-08	1.822E-09
U-238	U-238	4.219E-13	2.700E-13	2.687E-13	2.637E-13	2.576E-13	2.132E-13	1.684E-13	2.548E-14	2.405E-15
U-238	U-238	6.073E-15	3.886E-15	3.868E-15	3.796E-15	3.707E-15	3.069E-15	2.424E-15	3.668E-16	3.462E-17
U-238	∑S(j):		2.739E-13	2.726E-13	2.675E-13	2.613E-13	2.163E-13	1.708E-13	2.585E-14	2.440E-15
U-238	U-238	6.713E-11	4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13
U-238	U-238	8.862E-17	5.671E-17	5.645E-17	5.539E-17	5.410E-17	4.479E-17	3.537E-17	5.353E-18	5.052E-19
U-238	∑S(j):		4.296E-11	4.276E-11	4.196E-11	4.098E-11	3.393E-11	2.680E-11	4.055E-12	3.828E-13

Summary : Perim Soil Add.3-Industrial-NO Bkdg subtract

File : C:\USERS\USER\DOCUMENTS\PROJECTS\PW GROSSER\PERIMETER SOILS REVIEW-2014\RESRAD\BNL-PERIM-SOILS-ADD3-INDUS-NO BKD SUB-C.RAD

Individual Nuclide Soil Concentration

Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g t= 0.000E+00	1.000E+00	5.000E+00	1.000E+01	5.000E+01	1.000E+02	5.000E+02	1.000E+03
Ra-226	U-238	6.713E-11	0.000E+00	8.034E-26	9.942E-24	7.855E-23	8.890E-21	6.296E-20	3.237E-18	1.040E-17
Ra-226	U-238	8.862E-17	0.000E+00	1.060E-31	1.312E-29	1.037E-28	1.173E-26	8.310E-26	4.272E-24	1.373E-23
Ra-226	U-238	1.276E-18	0.000E+00	1.526E-33	1.889E-31	1.492E-30	1.689E-28	1.196E-27	6.150E-26	1.977E-25
Ra-226	U-238	4.189E-08	0.000E+00	5.013E-23	6.204E-21	4.901E-20	5.547E-18	3.928E-17	2.020E-15	6.491E-15
Ra-226	U-238	5.530E-14	0.000E+00	6.617E-29	8.189E-27	6.470E-26	7.322E-24	5.186E-23	2.666E-21	8.569E-21
Ra-226	U-238	7.959E-16	0.000E+00	9.525E-31	1.179E-28	9.312E-28	1.054E-25	7.464E-25	3.837E-23	1.233E-22
Ra-226	∑S(j):		0.000E+00	5.021E-23	6.214E-21	4.909E-20	5.556E-18	3.935E-17	2.023E-15	6.502E-15
U-238	U-238	1.276E-18	8.163E-19	8.125E-19	7.973E-19	7.787E-19	6.447E-19	5.092E-19	7.705E-20	7.272E-21
U-238	U-238	3.200E-10	2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	∑S(j):		2.048E-10	2.038E-10	2.000E-10	1.954E-10	1.617E-10	1.277E-10	1.933E-11	1.824E-12
U-238	U-238	4.224E-16	2.703E-16	2.691E-16	2.640E-16	2.579E-16	2.135E-16	1.686E-16	2.552E-17	2.408E-18
U-238	U-238	6.080E-18	3.891E-18	3.873E-18	3.800E-18	3.712E-18	3.073E-18	2.427E-18	3.673E-19	3.467E-20
U-238	∑S(j):		2.742E-16	2.729E-16	2.678E-16	2.616E-16	2.166E-16	1.710E-16	2.588E-17	2.443E-18
U-238	U-238	9.980E-01	6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.317E-06	8.431E-07	8.391E-07	8.234E-07	8.042E-07	6.658E-07	5.258E-07	7.958E-08	7.511E-09
U-238	∑S(j):		6.387E-01	6.357E-01	6.238E-01	6.093E-01	5.044E-01	3.984E-01	6.029E-02	5.690E-03
U-238	U-238	1.896E-08	1.214E-08	1.208E-08	1.185E-08	1.158E-08	9.584E-09	7.569E-09	1.145E-09	1.081E-10
U-238	U-238	2.096E-04	1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	∑S(j):		1.342E-04	1.335E-04	1.310E-04	1.280E-04	1.060E-04	8.368E-05	1.266E-05	1.195E-06
U-238	U-238	2.767E-10	1.771E-10	1.763E-10	1.730E-10	1.689E-10	1.399E-10	1.105E-10	1.671E-11	1.578E-12
U-238	U-238	3.983E-12	2.549E-12	2.537E-12	2.490E-12	2.431E-12	2.013E-12	1.590E-12	2.406E-13	2.271E-14
U-238	∑S(j):		1.796E-10	1.788E-10	1.754E-10	1.714E-10	1.419E-10	1.120E-10	1.696E-11	1.600E-12
U-238	U-238	1.994E-04	1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	2.633E-10	1.685E-10	1.677E-10	1.646E-10	1.607E-10	1.331E-10	1.051E-10	1.590E-11	1.501E-12
U-238	∑S(j):		1.276E-04	1.270E-04	1.247E-04	1.218E-04	1.008E-04	7.961E-05	1.205E-05	1.137E-06
U-238	U-238	3.789E-12	2.425E-12	2.414E-12	2.369E-12	2.313E-12	1.915E-12	1.513E-12	2.289E-13	2.161E-14
U-238	U-238	4.189E-08	2.681E-08	2.668E-08	2.618E-08	2.557E-08	2.117E-08	1.672E-08	2.530E-09	2.388E-10
U-238	∑S(j):		2.681E-08	2.669E-08	2.619E-08	2.558E-08	2.118E-08	1.672E-08	2.531E-09	2.389E-10
U-238	U-238	5.530E-14	3.539E-14	3.522E-14	3.456E-14	3.376E-14	2.795E-14	2.207E-14	3.340E-15	3.153E-16
U-238	U-238	7.959E-16	5.094E-16	5.070E-16	4.975E-16	4.859E-16	4.023E-16	3.177E-16	4.808E-17	4.538E-18
U-238	∑S(j):		3.590E-14	3.573E-14	3.506E-14	3.424E-14	2.835E-14	2.239E-14	3.388E-15	3.198E-16
U-238	U-238	1.997E-07	1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	2.636E-13	1.687E-13	1.679E-13	1.648E-13	1.609E-13	1.332E-13	1.052E-13	1.592E-14	1.503E-15
U-238	∑S(j):		1.278E-07	1.272E-07	1.248E-07	1.219E-07	1.009E-07	7.971E-08	1.206E-08	1.138E-09
U-238	U-238	3.794E-15	2.428E-15	2.417E-15	2.371E-15	2.316E-15	1.918E-15	1.514E-15	2.292E-16	2.163E-17

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

RESCALC.EXE execution time = 363.31 seconds

Total water/soil iteration failures = 3.000E+01.

Appendix B
ORISE IV Report

OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION
Managed by ORAU for DOE

February 26, 2015

Ms. Terri Kneitel
U.S. Department of Energy
Brookhaven Site Office
53 Bell Avenue, Bldg. 464
Upton, NY 11973

SUBJECT: DOE CONTRACT NO. DE-AC05-06OR23100
PROJECT-SPECIFIC TYPE A VERIFICATION FOR PHASE 3 OF THE FORMER HAZARDOUS WASTE MANAGEMENT FACILITY PERIMETER AREA SOIL REMEDIATION, BROOKHAVEN NATIONAL LABORATORY, UPTON, NEW YORK
DCN: 5098-LT-02-0

Dear Ms. Kneitel,

The purpose of this project was to plan and complete a remedial effort of approximately 3.4 acres southeast of the Former Hazardous Waste Management Facility (FHWMF), designated as Phase 3 of the FHWMF perimeter area. It is the policy of the U.S. Department of Energy (DOE) to perform independent verification (IV) of decontamination and decommissioning activities conducted at DOE facilities. Therefore, Oak Ridge Institute for Science and Education (ORISE), managed by ORAU for DOE, was scoped with performing a Type A (off-site) IV, which included the review of pre-excavation planning documents and post-excavation final status survey data and report. Comments on the field sampling plan (FSP) (BNL 2014) were presented in ORISE 2014, and comments on the January 2015 version of the final completion report (BNL 2015a) were presented in ORISE 2015. The final completion report was resubmitted in February 2015 after addressing ORISE comments (BNL 2015b). A summary of site activities and IV conclusions are presented in the following discussion.

The Brookhaven National Laboratory (BNL) remediation contractor planned and executed a post-excavation, high-density walkover survey of the target area. Systematic surveys were performed in thirteen ~10,000 ft^2 grids using an unshielded 2-inch × 2-inch sodium iodide (NaI) scintillation detector (Eberline Model SPA 3) coupled to a ratemeter-scaler (Ludlum Model 2221) and a PRO XR Satellite Receiver Trimble model TSCe Data Logger. The grids were cleared of underbrush and obstacles before surveyors followed parallel lanes spaced 1-meter apart. Two additional grids were surveyed using a judgmental approach; a focused walkover survey with an approximate radius of

10 feet beyond the edge of the three excavated areas. Grids were grouped as follows into survey units (SUs) (BNL 2105):

- SU-A = Grids A1, A2, A3, and A4
- SU-B = Grids B1, B2, B3, and B4
- SU-C = Grids C1, C2, and C3
- SU-D = Grids D1 and D2
- Grids E1 and E2 (each stand-alone—no SU designation)

A systematic triangular grid was distributed across each SU using a random starting point for determining random measurement and sampling locations. All samples from each SU were analyzed for gamma spectroscopy. Two composite samples per SU were analyzed for Sr-90, Pu-238/239/240/241, U-235/238, lead, and mercury. Increments for Composite 1 per SU included soils from Locations 1 through 11 (e.g., SU-A-1 through SU-A-11), and increments for Composite 2 per SU soils from Locations 12 through 21. The exception is E-1 and E-2, which only includes grab samples; these were judgmentally selected from excavated surfaces.

ORISE determined that the FSP and data summary provided sufficient information to support a Type A IV. The documentation provided sufficient information related to the selection of field instrumentation with sensitivity to meet the scan minimum detectable concentrations (MDCs). Additionally, ORISE determined that the remediation contractor appropriately addressed scan coverage, measurements, and analytical requirements for soil samples collected for the contaminants of concern.

ORISE reviewed the January 2015 version of the completion report (BNL 2015a) and offered several comments for consideration. All comments were adequately addressed in the February 2015 version of the revised report (BNL 2015b). ORISE has determined that, based on the data provided and described in the revised final completion report (BNL 2015b), the remediation contractor has provided sufficient evidence that Phase 3 effort was sufficient to satisfy the cleanup goals specified in the FSP (BNL 2009). Please contact me at (865) 574-0685 or Tim Vitkus at (865) 576-5073 should you have any questions or need additional information.

Sincerely,

David A. King, CHP, PMP
Sr. Health Physicist/Project Manager
ORAU

DAK:fs

Enclosure

electronic distribution: T. Vitkus, ORAU E. Bailey, ORAU
File/5098

Distribution approval and concurrence:	Initials
Group Manager Review	ENB

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BNL 2009. *Field Sampling Plan – Former Hazardous Waste Management Facility Perimeter Area*. Brookhaven National Laboratory. Environmental Protection Division. Upton, New York. August 19.

BNL 2014. *Addendum to the Field Sampling Plan – Former Hazardous Waste Management Facility Perimeter Area – Phase 3*. Brookhaven National Laboratory. Environmental Protection Division. Upton, New York. February.

BNL 2015a. *Addendum to the Final Completion Report Former Hazardous Waste Management Facility Perimeter Area Soil Remediation* (DRAFT). Brookhaven National Laboratory. Environmental Protection Division. Upton, New York. January 20.

BNL 2015b. *Addendum to the Final Completion Report Former Hazardous Waste Management Facility Perimeter Area Soil Remediation* (DRAFT). Brookhaven National Laboratory. Environmental Protection Division. Upton, New York. February 23.

ORISE 2014. *Document Review— Comments on the Addendum to the Field Sampling Plan for Report Former Hazardous Waste Management Facility Perimeter Area – Phase 3, Brookhaven National Laboratory, Upton, New York*. DCN: 5098-DR-02-0. Oak Ridge Institute for Science and Education. Managed for the U.S. Department of Energy by ORAU. Oak Ridge, Tennessee. June 5.

ORISE 2015. *Document Review— Comments on the Addendum to the Final Completion Report Former Hazardous Waste Management Facility Perimeter Area Soil Remediation, Brookhaven National Laboratory, Upton, New York*. DCN: 5098-DR-03-0. Oak Ridge Institute for Science and Education. Managed for the U.S. Department of Energy by ORAU. Oak Ridge, Tennessee. February 9.

Appendix C
RESRAD Input Parameters

RESRAD Input Parameters and Results Comparison

RESRAD Analysis Inputs – Addendum 3 to FHWMF Perimeter Area

The RESRAD computer code (RESRAD Version 7.0, Argonne National Laboratory) is used to determine whether a remediated area has met the criteria of 15 millirem per year, with an ALARA goal of 10 millirem per year (NYSDEC TAGM 4003, 1993).

For the Addendum to the Former Hazardous Waste Management Facility (FHWMF) Perimeter Area, two scenarios are used: 1- Industrial Scenario with 0 years decay time (or greater), and 2- Residential Scenario with a decay time of 50 years (or greater). The parameters used for RESRAD are a combination of default parameters and site specific parameters. The input parameters are based on the following document: "Final Remedial Investigation/ Risk Assessment Report, OU I/VI, June 14, 1996, CDM Federal Programs Corp." The attached table provides the details of the input parameters used for the original CDM Report, and for the current RESRAD run for the Addendum to the FHWMF Perimeter Area. Yellow shaded areas indicate non-default parameters.

			Reference:	**Final RI/RA OU I/VI June 1996, CDM Document**		**Addendum 3 FHWMF Perimeter Area Resrad Evaluation**	
Resrad Parameter	**Menu-Name**	**Units**	**Default Value**	**Industrial User Input**	**Residential User Input**	**Industrial User Input**	**Residential User Input**
Area of Contaminated Zone	R011 - AREA	m^2	1.00E+04	5.20E+04	5.20E+04	1.40 E+4	1.40 E+04
Thickness of Contaminated Zone	R011- THICK0	m	2.00E+00	5.00E+00	5.00E+00	5.00E+00	5.00E+00
Length Parallel to Aquifer Flow	R011 - LCZPAQ	m	1.00E+02	2.50E+02	2.50E+02	2.50E+02	2.50E+02
Unsaturated Zone Thickness	R015- H (1)	m	4.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Inhalation Rate	R017 – INHALR	m^3/yr	8.40E+03	7.30E+03	7.30E+03	7.30E+03	7.30E+03

RESRAD Input Parameters and Results Comparison

			Reference:	Final RI/RA OU I/VI June 1996, CDM Document		Addendum 3 FHWMF Perimeter Area Resrad Evaluation	
Resrad Parameter	**Menu-Name**	**Units**	**Default Value**	**Industrial User Input**	**Residential User Input**	**Industrial User Input**	**Residential User Input**
Mass Loading for Inhalation	R017 – MLINH	g/m^3	1.00E-04	1.00E-04	1.00E-04	1.00E-04	1.00E-04
Exposure Duration	R017 – ED	yr	3.00E+01	2.50E+01	3.00E+01	2.50E+01	3.00E+01
Shielding Factor, Inhalation	R017 – SHF3	unitless	4.00E-01	4.00E-01	4.00E-01	4.00E-01	4.00E-01
Shielding Factor, External Gamma	R017 – SHF1	unitless	7.00E-01	8.00E-01	8.00E-01	8.00E-01	8.00E-01
Fraction of Time Spent Indoors	R017 – FIND	unitless	5.00E-01	1.70E-01	5.00E-01	1.70E-01	5.00E-01
Fraction of Time Spent Outdoors (onsite)	R017 – FOTD	unitless	2.50E-01	6.00E-02	2.50E-01	6.00E-02	2.50E-01
Shape Factor, External Gamma	R017 – FS	unitless	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Depth of Cover Material	R013 – COVER0	m	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Density of Cover Material	R013 – DENSCV	g/cc	1.50E+00	not used, no cover	not used, no cover	not used, no cover	not used, no cover
Contaminated Zone Total Porosity	R013 – TPCZ	unitless	4.00E-01	3.30E-01	3.30E-01	3.30E-01	3.30E-01

RESRAD Input Parameters and Results Comparison

			Reference:	Final RI/RA OU I/VI June 1996, CDM Document		Addendum 3 FHWMF Perimeter Area Resrad Evaluation	
Resrad Parameter	**Menu-Name**	**Units**	**Default Value**	**Industrial User Input**	**Residential User Input**	**Industrial User Input**	**Residential User Input**
Contaminated Zone Field Capacity	R013 – FCCZ	unitless	2.00E-01	2.40E-01	2.40E-01	2.40E-01	2.40E-01
Contaminated Zone Hydraulic Conductivity	R013 – HCCZ	m/yr	1.00E+01	5.00E+03	5.00E+03	5.00E+03	5.00E+03
Contaminated Zone b Parameter	R013 – BCZ	unitless	5.30E+00	4.90E+00	4.90E+00	4.90E+00	4.90E+00
Contaminated Zone Erosion Rate	R013 - VCZ	m/yr	1.00E-03	1.00E-03	1.00E-03	1.00E-03	1.00E-03
Humidity in Air	R013 - HUMID	g/m^3	8.00E+00	6.60E+00	6.60E+00	Not Used	Not Used
Evapotranspiration Coefficient	R013 – EVAPTR	unitless	5.00E-01	4.60E-01	4.60E-01	4.60E-01	4.60E-01
Precipitation	R013 – PRECIP	m/yr	1.00E+00	1.23E+00	1.23E+00	1.23E+00	1.23E+00
Average Annual Wind Speed	R013 - WIND	m/sec	2.00E+00	6.23E+00	6.23E+00	6.23E+00	6.23E+00
Density of Saturated Zone	R014 – DENSAQ	g/cc	1.50E+00	1.66E+00	1.66E+00	1.66E+00	1.66E+00
Saturated Zone Total Porosity	R014 – TPSZ	unitless	4.00E-01	3.30E-01	3.30E-01	3.30E-01	3.30E-01

RESRAD Input Parameters and Results Comparison

			Reference:	Final RI/RA OU I/VI June 1996, CDM Document		Addendum 3 FHWMF Perimeter Area Resrad Evaluation	
Resrad Parameter	**Menu-Name**	**Units**	**Default Value**	**Industrial User Input**	**Residential User Input**	**Industrial User Input**	**Residential User Input**
Saturated Zone Effective Porosity	R014 – EPSZ	unitless	2.00E-01	2.40E-01	2.40E-01	2.40E-01	2.40E-01
Saturated Zone Hydraulic Conductivity	R014 – HCSZ	m/yr	1.00E+02	2.00E+04	2.00E+04	2.00E+04	2.00E+04
Saturated Zone Hydraulic Gradient	R014 – HGWT	unitless	2.00E-02	4.80E-03	4.80E-03	4.80E-03	4.80E-03
Saturated Zone b Parameter	R014 – BSZ	unitless	5.30E+00	4.90E+00	4.90E+00	4.90E+00	4.90E+00
Well Pump Intake Depth	R014 – DW1BWT	m below water table	1.00E+01	1.80E+01	1.80E+01	1.80E+01	1.80E+01
Well Pumping Rate	R014 – UW	m^3/yr	2.50E+02	2.50E+02	2.50E+02	2.50E+02	2.50E+02
Unsaturated Zone Soil Density	R015 – DENSUZ (1)	g/cc	1.50E+00	1.66E+00	1.66E+00	1.66E+00	1.66E+00
Unsaturated Zone Total Porosity	R015 – TPUZ (1)	unitless	4.00E-01	3.30E-01	3.30E-01	3.30E-01	3.30E-01
Unsaturated Zone Effective Porosity	R015 – EPUZ (1)	unitless	2.00E-01	2.40E-01	2.40E-01	2.40E-01	2.40E-01
Unsaturated Zone Soil-Specific b Parameter	R015 – BUZ (1)	unitless	5.30E+00	4.90E+00	4.90E+00	4.90E+00	4.90E+00

RESRAD Input Parameters and Results Comparison

			Reference:	Final RI/RA OU I/VI June 1996, CDM Document		Addendum 3 FHWMF Perimeter Area Resrad Evaluation	
Resrad Parameter	**Menu-Name**	**Units**	**Default Value**	**Industrial User Input**	**Residential User Input**	**Industrial User Input**	**Residential User Input**
Unsaturated Zone Hydraulic Conductivity	R015 – HCUZ (1)	m/yr	1.00E+01	5.00E+03	5.00E+03	5.00E+03	5.00E+03
Fruit, Vegetable and Grain Consumption	R018 - DIET(1)	kg/yr	1.60E+02	N/A	1.60E+02	N/A	1.60E+02
Leafy Vegetable Consumption	R018 - DIET(2)	kg/yr	1.40E+01	N/A	1.40E+01	N/A	1.40E+01
Soil Ingestion Rate	R018 - SOIL	g/yr	3.65E+01	3.65E+01	4.38E+01	3.65E+01	4.38E+01
Drinking Water Intake	R018 - DWI	L/yr	5.10E+02	3.50E+02	7.00E+02	3.50E+02	7.00E+02
Household Water Fraction	R018 - FDW	unitless	1.00E+00	1.00E+00	1.00E+00	1.00E+00	1.00E+00
Mass Loading for Foliar Deposition	R019 - MLFD	g/m^3	1.00E-04	1.00E-05	1.00E-05	Not used	1.00E-05
Building Depth below Ground Level	R021 - DMFL	m	-1.00E+00	N/A	-1.00E+00	not used - 1.00E+00	not used - 1.00E+00
Emanating Power of Rn-222 gas	EMANA(1)	unitless	2.50E-01	N/A	2.50E-01	not used 2.50E-01	not used 2.50E-01
Emanating Power of Rn-220 gas	EMANA(2)	unitless	1.50E-01	N/A	1.50E-01	not used 1.50E-01	not used 1.50E-01

RESRAD Input Parameters and Results Comparison

			Reference:	Final RI/RA OU I/VI June 1996, CDM Document		Addendum 3 FHWMF Perimeter Area Resrad Evaluation	
Resrad Parameter	**Menu-Name**	**Units**	**Default Value**	**Industrial User Input**	**Residential User Input**	**Industrial User Input**	**Residential User Input**
Cs-137 Distribution Coefficient	R016 – DCNUCC	cc/g	1.00E+03	2.80E+02	2.80E+02	2.80E+02	2.80E+02
Ra-226 Distribution Coefficient	R016 – DCNUCC	cc/g	7.00E+01	5.00E+02	5.00E+02	5.00E+02	5.00E+02
Sr-90 Distribution Coefficient	R016 – DCNUCC	cc/g	3.00E+01	3.00E+00	3.00E+00	3.00 E+00	3.00E+00
U-238 Distribution Coefficient	R016 – DCNUCC	cc/g	5.00E+01	1.70E+01	1.70E+01	1.70E+01	1.70E+01
External Gamma	N/A			Active	Active	Active	Active
Inhalation Pathway (w/o radon)	N/A			Active	Active	Active	Active
Plant Ingestion Pathway	N/A			Suppressed	Active	Suppressed	Active
Meat Ingestion Pathway	N/A			Suppressed	Suppressed	Suppressed	Suppressed
Milk Ingestion Pathway	N/A			Suppressed	Suppressed	Suppressed	Suppressed
Aquatic Foods Pathway	N/A			Suppressed	Suppressed	Suppressed	Suppressed
Drinking Water Pathway	N/A			Active	Active	Active	Active
Soil Ingestion Pathway	N/A			Active	Active	Active	Active
Radon Pathway	N/A			Active	Active	Suppressed (no buildings)	Suppressed (no buildings)