

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

Table of Contents

Part VI: Uncertainty Analysis

RESRAD Uncertainty Analysis Results

Probabilistic Input .....	2
Total Dose .....	3
Total Risk .....	4
Dose vs Pathway: Ground External .....	5
Dose vs Pathway: Inhalation (w/o Radon) .....	6
Dose vs Pathway: Radon (Water Ind.) .....	7
Dose vs Pathway: Plant (Water Ind.) .....	8
Dose vs Pathway: Meat (Water Ind.) .....	9
Dose vs Pathway: Milk (Water Ind.) .....	10
Dose vs Pathway: Soil Ingestion .....	11
Dose vs Pathway: Water Ingestion .....	12
Dose vs Pathway: Fish Ingestion .....	13
Dose vs Pathway: Radon (Water Dep.) .....	14
Dose vs Pathway: Plant (Water Dep.) .....	15
Dose vs Pathway: Meat (Water Dep.) .....	16
Dose vs Pathway: Milk (Water Dep.) .....	17
Cumulative Probability Summary.....	18
Summary of dose at graphical times, reptition 1.....	19
Summary of dose at graphical times, reptition 2.....	20
Summary of dose at graphical times, reptition 3.....	21
Peak of the mean dose at graphical times.....	22
Correlation and Regression coefficients (if any).....	23

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Input

Number of Sample Runs: 3000

Number	Name	Distribution	Parameters							
1	DENSCV	TRUNCATED NORMAL	1.51	.159	.001	.999				
2	VCZ	CONTINUOUS LOGARITHMIC4	5.E-8	0	.0007	.22	.005	.95	.2	1
3	TPCZ	TRUNCATED NORMAL	.43	.06	.001	.999				
4	HCCZ	LOGUNIFORM	786	17000						
5	BCZ	TRUNCATED LOGNORMAL-N	-.0235	.216	.001	.999				
6	EVAPTR	UNIFORM	.5	.75						
7	WIND	BOUNDED LOGNORMAL-N	1.445	.2419	1.4	13				
8	RUNOFF	UNIFORM	.1	.8						
9	DENSAQ	TRUNCATED NORMAL	1.51	.16	.001	.999				
10	TPSZ	TRUNCATED NORMAL	.43	.06	.001	.999				
11	EPSZ	TRUNCATED NORMAL	.383	.061	.001	.999				
12	HCSZ	LOGUNIFORM	786	17000						
13	HGWT	BOUNDED LOGNORMAL-N	-5.11	1.77	.00007	.5				
14	DWIBWT	TRIANGULAR	6	10	30					
15	MLINH	CONTINUOUS LINEAR	8	0	0	.000008	.0151	.000016	.1365	.00003 .8119
16	DM	TRIANGULAR	0	.15	.6					
17	DROOT	UNIFORM	.3	4						
18	WLAM	TRIANGULAR	5.1	18	84					
19	YV(1)	TRUNCATED LOGNORMAL-N	.56	.48	.001	.999				
20	RWET(2)	TRIANGULAR	.06	.67	.95					
21	SHF3	UNIFORM	.15	.95						
22	SHF1	BOUNDED LOGNORMAL-N	-1.3	.59	.044	1				
23	VCV	CONTINUOUS LOGARITHMIC4	5.E-8	0	.0007	.22	.005	.95	.2	1
24	TPUZ(1)	TRUNCATED NORMAL	.43	.06	.001	.999				
25	EPUZ(1)	TRUNCATED NORMAL	.383	.061	.001	.999				
26	HCUZ(1)	LOGUNIFORM	786	17000						
27	BUZ(1)	TRUNCATED LOGNORMAL-N	-.0253	.216	.001	.999				
28	BRTF(27,1)	LOGNORMAL-N	-2.53	.916291						
29	BRTF(27,2)	LOGNORMAL-N	-3.51	1.029619						
30	BRTF(27,3)	LOGNORMAL-N	-6.21	.7						
31	BRTF(55,1)	LOGNORMAL-N	-3.22	.993252						
32	BRTF(55,2)	LOGNORMAL-N	-3	.405465						
33	BRTF(55,3)	LOGNORMAL-N	-4.61	.47						
34	BRTF(28,1)	LOGNORMAL-N	-3	.916291						
35	BRTF(28,2)	LOGNORMAL-N	-5.3	.916291						
36	BRTF(28,3)	LOGNORMAL-N	-3.91	.69315						
37	BRTF(38,1)	LOGNORMAL-N	-1.2	.993252						
38	BRTF(38,2)	LOGNORMAL-N	-4.61	.405465						
39	BRTF(38,3)	LOGNORMAL-N	-6.21	.47						
40	DENSCZ	TRUNCATED NORMAL	1.51	.16	.001	.999				
41	DENSUZ(1)	TRUNCATED NORMAL	1.51	.16	.001	.999				

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Total Dose Summary

Nuclide (j)	Peak Time	Peak Dose	DOSE(j,t), mrem/yr							
			t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137										
Min	0.00E+00	4.50E-01	4.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	4.72E+00	4.72E+00	4.57E+00	4.27E+00	3.36E+00	1.54E+00	3.56E-01	2.60E-03	1.27E-10
Avg	0.00E+00	1.19E+00	1.19E+00	1.15E+00	1.07E+00	8.53E-01	2.84E-01	3.62E-02	1.47E-04	4.46E-12
Std	0.00E+00	4.22E-01	4.22E-01	4.24E-01	4.14E-01	3.50E-01	1.94E-01	4.61E-02	3.19E-04	1.22E-11
ΣALL										
Min	0.00E+00	4.50E-01	4.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max	0.00E+00	4.72E+00	4.72E+00	4.57E+00	4.27E+00	3.36E+00	1.54E+00	3.56E-01	2.60E-03	1.27E-10
Avg	0.00E+00	1.19E+00	1.19E+00	1.15E+00	1.07E+00	8.53E-01	2.84E-01	3.62E-02	1.47E-04	4.46E-12
Std	0.00E+00	4.22E-01	4.22E-01	4.24E-01	4.14E-01	3.50E-01	1.94E-01	4.61E-02	3.19E-04	1.22E-11

ΣALL is total dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Risk Summary

Nuclide (j)	t=	RISK(j,t)							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		2.90E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		6.70E-05	6.52E-05	6.21E-05	5.23E-05	2.47E-05	5.71E-06	4.17E-08	2.06E-15
Avg		1.71E-05	1.65E-05	1.54E-05	1.21E-05	3.93E-06	5.29E-07	2.35E-09	7.16E-17
Std		6.92E-06	6.79E-06	6.51E-06	5.59E-06	3.18E-06	7.28E-07	5.11E-09	1.96E-16
ΣALL									
Min		2.90E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		6.70E-05	6.52E-05	6.21E-05	5.23E-05	2.47E-05	5.71E-06	4.17E-08	2.06E-15
Avg		1.71E-05	1.65E-05	1.54E-05	1.21E-05	3.93E-06	5.29E-07	2.35E-09	7.16E-17
Std		6.92E-06	6.79E-06	6.51E-06	5.59E-06	3.18E-06	7.28E-07	5.11E-09	1.96E-16

ΣALL is total risk summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Ground External

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		3.47E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		2.33E+00	2.26E+00	2.15E+00	1.80E+00	8.74E-01	2.14E-01	1.90E-03	1.24E-10
Avg		9.58E-01	9.21E-01	8.61E-01	6.94E-01	2.36E-01	3.01E-02	1.19E-04	3.65E-12
Std		3.40E-01	3.42E-01	3.35E-01	2.87E-01	1.61E-01	3.80E-02	2.59E-04	1.01E-11
ΣALL									
Min		3.47E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		2.33E+00	2.26E+00	2.15E+00	1.80E+00	8.74E-01	2.14E-01	1.90E-03	1.24E-10
Avg		9.58E-01	9.21E-01	8.61E-01	6.94E-01	2.36E-01	3.01E-02	1.19E-04	3.65E-12
Std		3.40E-01	3.42E-01	3.35E-01	2.87E-01	1.61E-01	3.80E-02	2.59E-04	1.01E-11

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Inhalation (w/o Radon)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		7.85E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		2.24E-06	2.19E-06	2.08E-06	1.76E-06	7.65E-07	1.03E-07	7.09E-10	3.49E-17
Avg		2.37E-07	2.27E-07	2.10E-07	1.64E-07	5.02E-08	6.14E-09	2.75E-11	8.14E-19
Std		1.93E-07	1.88E-07	1.78E-07	1.46E-07	6.00E-08	1.11E-08	7.25E-11	2.69E-18
ΣALL									
Min		7.85E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		2.24E-06	2.19E-06	2.08E-06	1.76E-06	7.65E-07	1.03E-07	7.09E-10	3.49E-17
Avg		2.37E-07	2.27E-07	2.10E-07	1.64E-07	5.02E-08	6.14E-09	2.75E-11	8.14E-19
Std		1.93E-07	1.88E-07	1.78E-07	1.46E-07	6.00E-08	1.11E-08	7.25E-11	2.69E-18

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Radon (Water Ind.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Plant (Water Ind.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		3.19E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		1.24E+00	1.21E+00	1.15E+00	9.67E-01	4.57E-01	1.06E-01	7.71E-04	2.56E-11
Avg		4.46E-02	4.24E-02	3.88E-02	2.94E-02	8.73E-03	1.11E-03	5.22E-06	1.51E-13
Std		7.93E-02	7.58E-02	7.01E-02	5.43E-02	1.97E-02	3.75E-03	2.53E-05	8.41E-13
ΣALL									
Min		3.19E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		1.24E+00	1.21E+00	1.15E+00	9.67E-01	4.57E-01	1.06E-01	7.71E-04	2.56E-11
Avg		4.46E-02	4.24E-02	3.88E-02	2.94E-02	8.73E-03	1.11E-03	5.22E-06	1.51E-13
Std		7.93E-02	7.58E-02	7.01E-02	5.43E-02	1.97E-02	3.75E-03	2.53E-05	8.41E-13

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Meat (Water Ind.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		1.16E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		1.54E+00	1.48E+00	1.38E+00	1.06E+00	3.94E-01	9.12E-02	6.66E-04	2.21E-11
Avg		9.16E-02	8.74E-02	8.07E-02	6.23E-02	1.89E-02	2.37E-03	1.08E-05	3.21E-13
Std		7.94E-02	7.68E-02	7.18E-02	5.68E-02	2.28E-02	4.52E-03	3.07E-05	1.07E-12
ΣALL									
Min		1.16E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		1.54E+00	1.48E+00	1.38E+00	1.06E+00	3.94E-01	9.12E-02	6.66E-04	2.21E-11
Avg		9.16E-02	8.74E-02	8.07E-02	6.23E-02	1.89E-02	2.37E-03	1.08E-05	3.21E-13
Std		7.94E-02	7.68E-02	7.18E-02	5.68E-02	2.28E-02	4.52E-03	3.07E-05	1.07E-12

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Milk (Water Ind.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		9.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		1.83E+00	1.74E+00	1.61E+00	1.27E+00	4.76E-01	1.11E-01	8.39E-04	3.20E-11
Avg		9.94E-02	9.48E-02	8.73E-02	6.70E-02	2.01E-02	2.57E-03	1.18E-05	3.45E-13
Std		1.21E-01	1.16E-01	1.08E-01	8.30E-02	3.05E-02	5.92E-03	3.98E-05	1.41E-12
ΣALL									
Min		9.22E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		1.83E+00	1.74E+00	1.61E+00	1.27E+00	4.76E-01	1.11E-01	8.39E-04	3.20E-11
Avg		9.94E-02	9.48E-02	8.73E-02	6.70E-02	2.01E-02	2.57E-03	1.18E-05	3.45E-13
Std		1.21E-01	1.16E-01	1.08E-01	8.30E-02	3.05E-02	5.92E-03	3.98E-05	1.41E-12

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Soil Ingestion

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		9.37E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		6.99E-04	6.83E-04	6.51E-04	5.52E-04	2.69E-04	6.61E-05	5.92E-07	4.02E-14
Avg		4.66E-04	4.46E-04	4.13E-04	3.22E-04	9.93E-05	1.25E-05	5.60E-08	1.67E-15
Std		1.79E-04	1.80E-04	1.77E-04	1.55E-04	8.27E-05	1.81E-05	1.24E-07	4.64E-15
ΣALL									
Min		9.37E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		6.99E-04	6.83E-04	6.51E-04	5.52E-04	2.69E-04	6.61E-05	5.92E-07	4.02E-14
Avg		4.66E-04	4.46E-04	4.13E-04	3.22E-04	9.93E-05	1.25E-05	5.60E-08	1.67E-15
Std		1.79E-04	1.80E-04	1.77E-04	1.55E-04	8.27E-05	1.81E-05	1.24E-07	4.64E-15

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Water Ingestion

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Fish Ingestion

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Radon (Water Dep.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Plant (Water Dep.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Meat (Water Dep.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Probabilistic Dose vs Pathway(i): Milk (Water Dep.)

Nuclide (j)	t=	DOSE(i,j,t), mrem/yr							
		0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
Cs-137									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ΣALL									
Min		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Max		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Avg		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Std		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ΣALL is total pathway dose summed for all nuclides.

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Cumulative Probability Summary for: Total Dose Over Pathways

Cumulative Probability	Dose(t), mrem/yr							
	t= 0.00E+00	1.00E+00	3.00E+00	1.00E+01	4.05E+01	1.00E+02	3.00E+02	1.00E+03
0.025	6.70E-01	6.07E-01	4.93E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.050	7.14E-01	6.71E-01	6.16E-01	4.58E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.075	7.42E-01	7.07E-01	6.53E-01	5.18E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.100	7.71E-01	7.38E-01	6.83E-01	5.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.125	7.94E-01	7.62E-01	7.08E-01	5.62E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.150	8.15E-01	7.84E-01	7.31E-01	5.83E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
0.175	8.36E-01	8.01E-01	7.50E-01	6.01E-01	3.32E-02	0.00E+00	0.00E+00	0.00E+00
0.200	8.58E-01	8.25E-01	7.69E-01	6.15E-01	8.45E-02	0.00E+00	0.00E+00	0.00E+00
0.225	8.79E-01	8.47E-01	7.91E-01	6.34E-01	1.23E-01	0.00E+00	0.00E+00	0.00E+00
0.250	8.98E-01	8.66E-01	8.11E-01	6.49E-01	1.57E-01	0.00E+00	0.00E+00	0.00E+00
0.275	9.16E-01	8.85E-01	8.29E-01	6.67E-01	1.81E-01	0.00E+00	0.00E+00	0.00E+00
0.300	9.34E-01	9.00E-01	8.45E-01	6.80E-01	1.98E-01	0.00E+00	0.00E+00	0.00E+00
0.325	9.53E-01	9.20E-01	8.63E-01	6.94E-01	2.13E-01	0.00E+00	0.00E+00	0.00E+00
0.350	9.73E-01	9.38E-01	8.81E-01	7.08E-01	2.29E-01	0.00E+00	0.00E+00	0.00E+00
0.375	9.93E-01	9.61E-01	8.99E-01	7.21E-01	2.39E-01	0.00E+00	0.00E+00	0.00E+00
0.400	1.02E+00	9.80E-01	9.19E-01	7.37E-01	2.50E-01	0.00E+00	0.00E+00	0.00E+00
0.425	1.03E+00	1.00E+00	9.38E-01	7.51E-01	2.61E-01	0.00E+00	0.00E+00	0.00E+00
0.450	1.06E+00	1.02E+00	9.54E-01	7.67E-01	2.71E-01	0.00E+00	0.00E+00	0.00E+00
0.475	1.08E+00	1.04E+00	9.76E-01	7.84E-01	2.78E-01	0.00E+00	0.00E+00	0.00E+00
0.500	1.10E+00	1.06E+00	9.95E-01	8.02E-01	2.88E-01	1.13E-03	0.00E+00	0.00E+00
0.525	1.13E+00	1.09E+00	1.02E+00	8.17E-01	2.98E-01	1.57E-02	0.00E+00	0.00E+00
0.550	1.15E+00	1.11E+00	1.04E+00	8.40E-01	3.07E-01	2.61E-02	0.00E+00	0.00E+00
0.575	1.17E+00	1.13E+00	1.07E+00	8.62E-01	3.15E-01	3.38E-02	0.00E+00	0.00E+00
0.600	1.20E+00	1.16E+00	1.09E+00	8.80E-01	3.25E-01	3.97E-02	0.00E+00	0.00E+00
0.625	1.23E+00	1.19E+00	1.11E+00	8.96E-01	3.35E-01	4.48E-02	0.00E+00	0.00E+00
0.650	1.26E+00	1.21E+00	1.14E+00	9.19E-01	3.47E-01	4.93E-02	0.00E+00	0.00E+00
0.675	1.29E+00	1.24E+00	1.17E+00	9.44E-01	3.56E-01	5.36E-02	0.00E+00	0.00E+00
0.700	1.32E+00	1.27E+00	1.20E+00	9.66E-01	3.69E-01	5.78E-02	0.00E+00	0.00E+00
0.725	1.36E+00	1.31E+00	1.23E+00	9.93E-01	3.83E-01	6.19E-02	0.00E+00	0.00E+00
0.750	1.39E+00	1.34E+00	1.27E+00	1.03E+00	4.01E-01	6.67E-02	0.00E+00	0.00E+00
0.775	1.43E+00	1.38E+00	1.29E+00	1.05E+00	4.16E-01	7.17E-02	0.00E+00	0.00E+00
0.800	1.46E+00	1.42E+00	1.33E+00	1.08E+00	4.31E-01	7.65E-02	3.04E-04	0.00E+00
0.825	1.52E+00	1.47E+00	1.39E+00	1.11E+00	4.52E-01	8.16E-02	4.41E-04	4.83E-12
0.850	1.59E+00	1.53E+00	1.44E+00	1.16E+00	4.69E-01	8.78E-02	5.10E-04	1.01E-11
0.875	1.66E+00	1.60E+00	1.51E+00	1.22E+00	4.88E-01	9.45E-02	5.92E-04	1.37E-11
0.900	1.75E+00	1.69E+00	1.59E+00	1.28E+00	5.16E-01	1.01E-01	6.64E-04	1.81E-11
0.925	1.86E+00	1.80E+00	1.70E+00	1.37E+00	5.56E-01	1.10E-01	7.37E-04	2.33E-11
0.950	2.03E+00	1.96E+00	1.84E+00	1.49E+00	6.12E-01	1.22E-01	8.53E-04	2.96E-11
0.975	2.22E+00	2.15E+00	2.04E+00	1.63E+00	6.98E-01	1.47E-01	1.06E-03	4.17E-11
1.000	4.72E+00	4.57E+00	4.27E+00	3.36E+00	1.54E+00	3.56E-01	2.60E-03	1.27E-10

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Summary of dose at graphical times, reptition 1

Time Years	Dose statistics at graphical times, mrem/yr							
	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	4.88E-01	4.72E+00	1.20E+00	1.10E+00	1.77E+00	2.07E+00	2.26E+00	2.46E+00
1.00E+00	0.00E+00	4.57E+00	1.15E+00	1.05E+00	1.72E+00	2.02E+00	2.19E+00	2.38E+00
3.00E+00	0.00E+00	4.27E+00	1.07E+00	9.89E-01	1.62E+00	1.89E+00	2.07E+00	2.26E+00
1.00E+01	0.00E+00	3.36E+00	8.58E-01	7.97E-01	1.31E+00	1.52E+00	1.68E+00	1.85E+00
4.00E+01	0.00E+00	1.56E+00	2.91E-01	2.91E-01	5.23E-01	6.45E-01	7.51E-01	8.61E-01
4.05E+01	0.00E+00	1.54E+00	2.86E-01	2.85E-01	5.16E-01	6.34E-01	7.42E-01	8.50E-01
8.00E+01	0.00E+00	5.82E-01	7.06E-02	5.68E-02	1.77E-01	2.08E-01	2.62E-01	3.00E-01
1.00E+02	0.00E+00	3.56E-01	3.65E-02	1.28E-03	1.05E-01	1.22E-01	1.57E-01	1.86E-01
1.20E+02	0.00E+00	2.17E-01	1.93E-02	0.00E+00	6.21E-02	7.39E-02	9.50E-02	1.14E-01
1.60E+02	0.00E+00	8.13E-02	5.72E-03	0.00E+00	2.17E-02	2.75E-02	3.47E-02	4.34E-02
2.00E+02	0.00E+00	3.04E-02	1.86E-03	0.00E+00	7.99E-03	1.02E-02	1.28E-02	1.63E-02
2.40E+02	0.00E+00	1.14E-02	6.77E-04	0.00E+00	2.98E-03	3.82E-03	4.78E-03	6.13E-03
2.80E+02	0.00E+00	4.25E-03	2.49E-04	0.00E+00	1.10E-03	1.42E-03	1.80E-03	2.29E-03
3.00E+02	0.00E+00	2.60E-03	1.51E-04	0.00E+00	6.72E-04	8.65E-04	1.10E-03	1.40E-03
3.20E+02	0.00E+00	1.59E-03	9.16E-05	0.00E+00	4.09E-04	5.28E-04	6.80E-04	8.59E-04
3.60E+02	0.00E+00	5.94E-04	3.38E-05	0.00E+00	1.53E-04	2.00E-04	2.57E-04	3.25E-04
4.00E+02	0.00E+00	2.22E-04	1.25E-05	0.00E+00	5.64E-05	7.49E-05	9.50E-05	1.21E-04
4.40E+02	0.00E+00	8.30E-05	4.62E-06	0.00E+00	2.09E-05	2.81E-05	3.62E-05	4.53E-05
4.80E+02	0.00E+00	3.10E-05	1.71E-06	0.00E+00	7.75E-06	1.06E-05	1.36E-05	1.70E-05
5.20E+02	0.00E+00	1.16E-05	6.34E-07	0.00E+00	2.85E-06	3.94E-06	5.13E-06	6.43E-06
5.60E+02	0.00E+00	4.33E-06	2.35E-07	0.00E+00	1.04E-06	1.48E-06	1.91E-06	2.41E-06
6.00E+02	0.00E+00	1.62E-06	8.75E-08	0.00E+00	3.86E-07	5.53E-07	7.09E-07	9.29E-07
6.40E+02	0.00E+00	6.06E-07	3.25E-08	0.00E+00	1.43E-07	2.06E-07	2.71E-07	3.58E-07
6.80E+02	0.00E+00	2.29E-07	1.21E-08	0.00E+00	5.33E-08	7.74E-08	1.03E-07	1.37E-07
7.20E+02	0.00E+00	8.82E-08	4.52E-09	0.00E+00	1.98E-08	2.91E-08	3.93E-08	5.16E-08
7.60E+02	0.00E+00	3.40E-08	1.69E-09	0.00E+00	7.33E-09	1.09E-08	1.49E-08	1.94E-08
8.00E+02	0.00E+00	1.31E-08	6.29E-10	0.00E+00	2.74E-09	4.12E-09	5.69E-09	7.42E-09
8.40E+02	0.00E+00	5.06E-09	2.35E-10	0.00E+00	1.02E-09	1.55E-09	2.14E-09	2.87E-09
8.80E+02	0.00E+00	1.95E-09	8.78E-11	0.00E+00	3.78E-10	5.82E-10	8.03E-10	1.11E-09
9.20E+02	0.00E+00	7.53E-10	3.28E-11	0.00E+00	1.40E-10	2.20E-10	3.03E-10	4.28E-10
9.60E+02	0.00E+00	2.91E-10	1.23E-11	0.00E+00	5.19E-11	8.18E-11	1.15E-10	1.65E-10
1.00E+03	0.00E+00	1.12E-10	4.61E-12	0.00E+00	1.93E-11	3.05E-11	4.40E-11	6.32E-11

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Summary of dose at graphical times, reptition 2

Time Years	Dose statistics at graphical times, mrem/yr							
	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	4.76E-01	3.96E+00	1.19E+00	1.11E+00	1.72E+00	1.97E+00	2.19E+00	2.47E+00
1.00E+00	0.00E+00	3.81E+00	1.14E+00	1.07E+00	1.67E+00	1.90E+00	2.12E+00	2.41E+00
3.00E+00	0.00E+00	3.52E+00	1.06E+00	1.01E+00	1.58E+00	1.77E+00	2.00E+00	2.18E+00
1.00E+01	0.00E+00	2.67E+00	8.49E-01	8.11E-01	1.27E+00	1.44E+00	1.62E+00	1.81E+00
4.00E+01	0.00E+00	1.28E+00	2.87E-01	2.95E-01	5.24E-01	6.15E-01	6.79E-01	8.12E-01
4.05E+01	0.00E+00	1.27E+00	2.82E-01	2.91E-01	5.17E-01	6.07E-01	6.70E-01	8.01E-01
8.00E+01	0.00E+00	4.82E-01	7.03E-02	5.80E-02	1.74E-01	2.03E-01	2.41E-01	2.85E-01
1.00E+02	0.00E+00	2.96E-01	3.62E-02	1.11E-03	9.94E-02	1.22E-01	1.47E-01	1.71E-01
1.20E+02	0.00E+00	1.81E-01	1.90E-02	0.00E+00	5.87E-02	7.34E-02	8.85E-02	1.04E-01
1.60E+02	0.00E+00	6.83E-02	5.59E-03	0.00E+00	2.13E-02	2.65E-02	3.25E-02	3.91E-02
2.00E+02	0.00E+00	2.57E-02	1.81E-03	0.00E+00	7.78E-03	9.80E-03	1.22E-02	1.50E-02
2.40E+02	0.00E+00	9.67E-03	6.55E-04	0.00E+00	2.89E-03	3.61E-03	4.58E-03	5.76E-03
2.80E+02	0.00E+00	3.64E-03	2.40E-04	0.00E+00	1.07E-03	1.34E-03	1.74E-03	2.17E-03
3.00E+02	0.00E+00	2.23E-03	1.46E-04	0.00E+00	6.45E-04	8.19E-04	1.06E-03	1.31E-03
3.20E+02	0.00E+00	1.37E-03	8.83E-05	0.00E+00	3.93E-04	5.03E-04	6.55E-04	7.92E-04
3.60E+02	0.00E+00	5.15E-04	3.25E-05	0.00E+00	1.44E-04	1.89E-04	2.43E-04	2.87E-04
4.00E+02	0.00E+00	1.94E-04	1.20E-05	0.00E+00	5.29E-05	7.04E-05	9.10E-05	1.08E-04
4.40E+02	0.00E+00	7.30E-05	4.44E-06	0.00E+00	1.96E-05	2.63E-05	3.39E-05	4.14E-05
4.80E+02	0.00E+00	2.75E-05	1.64E-06	0.00E+00	7.25E-06	9.92E-06	1.27E-05	1.58E-05
5.20E+02	0.00E+00	1.07E-05	6.08E-07	0.00E+00	2.68E-06	3.71E-06	4.65E-06	6.03E-06
5.60E+02	0.00E+00	4.16E-06	2.25E-07	0.00E+00	9.86E-07	1.40E-06	1.73E-06	2.30E-06
6.00E+02	0.00E+00	1.62E-06	8.36E-08	0.00E+00	3.57E-07	5.21E-07	6.39E-07	8.75E-07
6.40E+02	0.00E+00	6.28E-07	3.11E-08	0.00E+00	1.32E-07	1.96E-07	2.40E-07	3.34E-07
6.80E+02	0.00E+00	2.44E-07	1.16E-08	0.00E+00	4.89E-08	7.26E-08	9.12E-08	1.29E-07
7.20E+02	0.00E+00	9.48E-08	4.30E-09	0.00E+00	1.80E-08	2.73E-08	3.46E-08	4.98E-08
7.60E+02	0.00E+00	3.68E-08	1.60E-09	0.00E+00	6.70E-09	1.02E-08	1.34E-08	1.92E-08
8.00E+02	0.00E+00	1.43E-08	5.96E-10	0.00E+00	2.48E-09	3.79E-09	5.06E-09	7.42E-09
8.40E+02	0.00E+00	5.56E-09	2.22E-10	0.00E+00	9.14E-10	1.43E-09	1.90E-09	2.87E-09
8.80E+02	0.00E+00	2.16E-09	8.29E-11	0.00E+00	3.39E-10	5.39E-10	7.24E-10	1.11E-09
9.20E+02	0.00E+00	8.39E-10	3.10E-11	0.00E+00	1.25E-10	2.03E-10	2.76E-10	4.28E-10
9.60E+02	0.00E+00	3.26E-10	1.16E-11	0.00E+00	4.66E-11	7.63E-11	1.05E-10	1.65E-10
1.00E+03	0.00E+00	1.27E-10	4.33E-12	0.00E+00	1.75E-11	2.86E-11	4.02E-11	6.38E-11

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

## Summary of dose at graphical times, reptition 3

Time Years	Dose statistics at graphical times, mrem/yr							
	Minimum	Maximum	Mean	Median	90%	95%	97.5%	99%
0.00E+00	4.50E-01	4.11E+00	1.19E+00	1.10E+00	1.75E+00	2.03E+00	2.21E+00	2.45E+00
1.00E+00	0.00E+00	3.93E+00	1.15E+00	1.06E+00	1.69E+00	1.97E+00	2.15E+00	2.38E+00
3.00E+00	0.00E+00	3.57E+00	1.07E+00	9.94E-01	1.59E+00	1.85E+00	2.04E+00	2.27E+00
1.00E+01	0.00E+00	2.55E+00	8.52E-01	8.00E-01	1.29E+00	1.50E+00	1.65E+00	1.88E+00
4.00E+01	0.00E+00	1.14E+00	2.88E-01	2.93E-01	5.22E-01	6.18E-01	6.93E-01	7.91E-01
4.05E+01	0.00E+00	1.13E+00	2.83E-01	2.88E-01	5.16E-01	6.10E-01	6.84E-01	7.80E-01
8.00E+01	0.00E+00	4.12E-01	6.96E-02	5.82E-02	1.70E-01	2.10E-01	2.40E-01	2.97E-01
1.00E+02	0.00E+00	2.47E-01	3.59E-02	1.21E-03	1.00E-01	1.23E-01	1.41E-01	1.83E-01
1.20E+02	0.00E+00	1.48E-01	1.89E-02	0.00E+00	5.96E-02	7.35E-02	8.58E-02	1.12E-01
1.60E+02	0.00E+00	5.35E-02	5.56E-03	0.00E+00	2.16E-02	2.74E-02	3.18E-02	4.27E-02
2.00E+02	0.00E+00	1.93E-02	1.80E-03	0.00E+00	7.96E-03	1.03E-02	1.18E-02	1.62E-02
2.40E+02	0.00E+00	7.08E-03	6.53E-04	0.00E+00	2.92E-03	3.72E-03	4.39E-03	6.14E-03
2.80E+02	0.00E+00	2.69E-03	2.40E-04	0.00E+00	1.09E-03	1.41E-03	1.68E-03	2.33E-03
3.00E+02	0.00E+00	1.66E-03	1.46E-04	0.00E+00	6.65E-04	8.60E-04	1.03E-03	1.42E-03
3.20E+02	0.00E+00	1.03E-03	8.84E-05	0.00E+00	4.03E-04	5.30E-04	6.33E-04	8.69E-04
3.60E+02	0.00E+00	3.90E-04	3.26E-05	0.00E+00	1.48E-04	2.00E-04	2.37E-04	3.24E-04
4.00E+02	0.00E+00	1.49E-04	1.20E-05	0.00E+00	5.45E-05	7.47E-05	8.88E-05	1.21E-04
4.40E+02	0.00E+00	5.66E-05	4.46E-06	0.00E+00	2.04E-05	2.78E-05	3.39E-05	4.49E-05
4.80E+02	0.00E+00	2.18E-05	1.65E-06	0.00E+00	7.61E-06	1.05E-05	1.28E-05	1.67E-05
5.20E+02	0.00E+00	8.42E-06	6.12E-07	0.00E+00	2.83E-06	3.90E-06	4.84E-06	6.23E-06
5.60E+02	0.00E+00	3.25E-06	2.27E-07	0.00E+00	1.05E-06	1.46E-06	1.83E-06	2.32E-06
6.00E+02	0.00E+00	1.25E-06	8.46E-08	0.00E+00	3.93E-07	5.51E-07	6.96E-07	8.71E-07
6.40E+02	0.00E+00	4.83E-07	3.15E-08	0.00E+00	1.46E-07	2.08E-07	2.64E-07	3.31E-07
6.80E+02	0.00E+00	1.87E-07	1.17E-08	0.00E+00	5.46E-08	7.82E-08	1.00E-07	1.27E-07
7.20E+02	0.00E+00	7.20E-08	4.38E-09	0.00E+00	2.04E-08	2.92E-08	3.79E-08	4.81E-08
7.60E+02	0.00E+00	2.78E-08	1.63E-09	0.00E+00	7.60E-09	1.10E-08	1.44E-08	1.85E-08
8.00E+02	0.00E+00	1.07E-08	6.09E-10	0.00E+00	2.76E-09	4.14E-09	5.40E-09	7.08E-09
8.40E+02	0.00E+00	4.13E-09	2.28E-10	0.00E+00	1.02E-09	1.52E-09	2.02E-09	2.72E-09
8.80E+02	0.00E+00	1.59E-09	8.51E-11	0.00E+00	3.77E-10	5.69E-10	7.58E-10	1.04E-09
9.20E+02	0.00E+00	6.15E-10	3.18E-11	0.00E+00	1.40E-10	2.14E-10	2.84E-10	3.98E-10
9.60E+02	0.00E+00	2.37E-10	1.19E-11	0.00E+00	5.17E-11	8.15E-11	1.09E-10	1.52E-10
1.00E+03	0.00E+00	9.15E-11	4.46E-12	0.00E+00	1.90E-11	3.10E-11	4.22E-11	5.83E-11

Probabilistic results summary : RESRAD Default

File : C:\USERS\DAVID FAUVER\DOCUMENTS\ZION\RESRAD\TSD\SOIL DCGL\SENSITIVITY ANALYSIS\RESRAD INPUT FILE\ZION SOIL SENSITIVITY.RAD

Peak of the mean dose (averaged over observations) at graphical times

Repetition	Time of peak mean dose	Peak mean dose
	Years	mrem/yr
1	0.000E+00	1.199E+00
2	0.000E+00	1.190E+00
3	0.000E+00	1.194E+00

Title : RESRAD Default

Input File : ZION SOIL SENSITIVITY.RAD

## Coefficients for peak All Pathways Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	1		1		1		1	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of cover material	35	-0.01	35	0.00	38	0.00	38	0.00
Contaminated zone erosion rate	4	-0.27	4	-0.12	8	-0.11	8	-0.04
Contaminated zone total porosity	13	0.04	13	0.02	40	0.00	40	0.00
Contaminated zone hydraulic conductivity	15	-0.04	15	-0.01	30	-0.02	30	-0.01
Contaminated zone b parameter	28	0.02	28	0.01	18	0.03	18	0.01
Evapotranspiration coefficient	37	-0.01	37	0.00	39	0.00	39	0.00
Wind Speed	17	-0.03	17	-0.01	24	0.02	24	0.01
Runoff coefficient	41	0.00	41	0.00	36	0.01	36	0.00
Density of saturated zone	39	0.00	39	0.00	33	-0.01	33	0.00
Saturated zone total porosity	27	0.02	27	0.01	10	0.06	10	0.02
Saturated zone effective porosity	12	-0.04	12	-0.02	41	0.00	41	0.00
Saturated zone hydraulic conductivity	26	-0.02	26	-0.01	17	0.03	17	0.01
Saturated zone hydraulic gradient	18	0.03	18	0.01	11	0.05	11	0.02
Well pump intake depth	19	0.03	19	0.01	31	-0.02	31	-0.01
Mass loading for inhalation	9	0.06	9	0.03	28	0.02	28	0.01
Depth of soil mixing layer	8	-0.13	8	-0.06	5	-0.30	5	-0.11
Depth of roots	3	-0.49	3	-0.24	3	-0.51	3	-0.21
Weathering removal constant of all vegetation	38	0.01	38	0.00	27	0.02	27	0.01
Wet weight crop yield of fruit, grain and non-leafy vegetables	23	0.02	23	0.01	14	0.04	14	0.02
Wet foliar interception fraction of leafy vegetables	14	0.04	14	0.02	26	-0.02	26	-0.01
Indoor dust filtration factor	30	0.02	30	0.01	23	-0.03	23	-0.01
External gamma shielding factor	1	0.88	1	0.76	1	0.92	1	0.85
Cover erosion rate	16	0.03	16	0.01	20	0.03	20	0.01
Total Porosity of Unsaturated zone 1	22	0.02	22	0.01	34	-0.01	34	0.00
Effective Porosity of Unsaturated zone 1	31	-0.02	31	-0.01	13	0.05	13	0.02
Hydraulic Conductivity of Unsaturated zone 1	36	-0.01	36	0.00	16	0.03	16	0.01
b Parameter of Unsaturated zone 1	25	-0.02	25	-0.01	37	-0.01	37	0.00
Plant transfer factor for Co	29	0.02	29	0.01	29	0.02	29	0.01
Meat transfer factor for Co	10	0.05	10	0.02	12	0.05	12	0.02
Milk transfer factor for Co	32	0.02	32	0.01	32	0.01	32	0.00
Plant transfer factor for Cs	2	0.68	2	0.39	2	0.60	2	0.26
Meat transfer factor for Cs	6	0.24	6	0.11	6	0.26	6	0.10
Milk transfer factor for Cs	5	0.27	5	0.12	4	0.30	4	0.11
Plant transfer factor for Ni	24	-0.02	24	-0.01	21	0.03	21	0.01
Meat transfer factor for Ni	11	0.05	11	0.02	22	-0.03	22	-0.01
Milk transfer factor for Ni	33	0.01	33	0.01	9	0.08	9	0.03
Plant transfer factor for Sr	21	-0.03	21	-0.01	35	0.01	35	0.00
Meat transfer factor for Sr	40	0.00	40	0.00	25	0.02	25	0.01
Milk transfer factor for Sr	34	0.01	34	0.00	15	-0.04	15	-0.01
Density of contaminated zone	7	0.15	7	0.07	7	0.17	7	0.06
Density of Unsaturated zone 1	20	0.03	20	0.01	19	-0.03	19	-0.01
R-SQUARE		0.82		0.82		0.87		0.87

-Rank is set to zero if the dose is zero or the correlation matrix is singular.

-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

Title : RESRAD Default

Input File : ZION SOIL SENSITIVITY.RAD

## Coefficients for peak All Pathways Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	2		2		2		2	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of cover material	13	0.05	13	0.02	16	0.04	16	0.01
Contaminated zone erosion rate	6	-0.25	6	-0.09	8	-0.11	8	-0.04
Contaminated zone total porosity	32	-0.01	32	0.00	24	-0.02	24	-0.01
Contaminated zone hydraulic conductivity	15	-0.04	15	-0.01	28	-0.01	28	0.00
Contaminated zone b parameter	11	0.06	11	0.02	9	0.07	9	0.03
Evapotranspiration coefficient	14	0.04	14	0.01	23	0.02	23	0.01
Wind Speed	21	-0.02	22	-0.01	22	0.02	22	0.01
Runoff coefficient	33	-0.01	33	0.00	36	-0.01	36	0.00
Density of saturated zone	30	-0.02	30	-0.01	17	-0.04	17	-0.01
Saturated zone total porosity	38	0.00	38	0.00	33	-0.01	33	0.00
Saturated zone effective porosity	17	0.03	17	0.01	31	0.01	31	0.00
Saturated zone hydraulic conductivity	31	0.01	31	0.00	26	0.02	26	0.01
Saturated zone hydraulic gradient	9	0.07	9	0.02	20	0.03	20	0.01
Well pump intake depth	12	0.05	12	0.02	30	-0.01	30	0.00
Mass loading for inhalation	28	-0.02	28	-0.01	29	0.01	29	0.00
Depth of soil mixing layer	5	-0.27	5	-0.09	4	-0.36	4	-0.13
Depth of roots	3	-0.52	3	-0.20	3	-0.49	3	-0.19
Weathering removal constant of all vegetation	10	-0.06	10	-0.02	10	-0.07	10	-0.02
Wet weight crop yield of fruit, grain and non-leafy vegetables	22	0.02	21	0.01	15	-0.04	15	-0.01
Wet foliar interception fraction of leafy vegetables	35	0.01	35	0.00	35	-0.01	35	0.00
Indoor dust filtration factor	23	0.02	23	0.01	18	-0.04	18	-0.01
External gamma shielding factor	1	0.92	1	0.82	1	0.93	1	0.85
Cover erosion rate	18	-0.03	18	-0.01	25	-0.02	25	-0.01
Total Porosity of Unsaturated zone 1	29	0.02	29	0.01	38	0.00	38	0.00
Effective Porosity of Unsaturated zone 1	20	0.03	20	0.01	19	0.03	19	0.01
Hydraulic Conductivity of Unsaturated zone 1	19	-0.03	19	-0.01	27	-0.01	27	0.00
b Parameter of Unsaturated zone 1	40	0.00	40	0.00	12	0.04	12	0.01
Plant transfer factor for Co	37	0.00	37	0.00	34	0.01	34	0.00
Meat transfer factor for Co	26	-0.02	26	-0.01	37	-0.01	37	0.00
Milk transfer factor for Co	16	-0.04	16	-0.01	32	0.01	32	0.00
Plant transfer factor for Cs	2	0.73	2	0.37	2	0.62	2	0.27
Meat transfer factor for Cs	7	0.24	7	0.08	7	0.19	7	0.06
Milk transfer factor for Cs	4	0.29	4	0.10	5	0.27	5	0.09
Plant transfer factor for Ni	25	-0.02	25	-0.01	14	-0.04	14	-0.01
Meat transfer factor for Ni	39	0.00	39	0.00	39	0.00	39	0.00
Milk transfer factor for Ni	41	0.00	41	0.00	21	0.02	21	0.01
Plant transfer factor for Sr	27	-0.02	27	-0.01	11	-0.05	11	-0.02
Meat transfer factor for Sr	34	-0.01	34	0.00	13	-0.04	13	-0.01
Milk transfer factor for Sr	36	0.01	36	0.00	41	0.00	41	0.00
Density of contaminated zone	8	0.18	8	0.06	6	0.24	6	0.08
Density of Unsaturated zone 1	24	-0.02	24	-0.01	40	0.00	40	0.00
R-SQUARE		0.89		0.89		0.89		0.89

-Rank is set to zero if the dose is zero or the correlation matrix is singular.

-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.

Title : RESRAD Default

Input File : ZION SOIL SENSITIVITY.RAD

## Coefficients for peak All Pathways Dose

Coefficient =	PCC		SRC		PRCC		SRRC	
Repetition =	3		3		3		3	
Description of Probabilistic Variable	Sig	Coeff	Sig	Coeff	Sig	Coeff	Sig	Coeff
Density of cover material	32	-0.01	32	0.00	11	0.05	11	0.02
Contaminated zone erosion rate	7	-0.21	7	-0.07	17	-0.04	17	-0.01
Contaminated zone total porosity	28	0.02	28	0.01	19	0.03	19	0.01
Contaminated zone hydraulic conductivity	12	-0.04	12	-0.01	25	-0.02	25	-0.01
Contaminated zone b parameter	33	-0.01	33	0.00	32	-0.01	32	0.00
Evapotranspiration coefficient	11	-0.04	11	-0.01	33	-0.01	33	0.00
Wind Speed	21	-0.03	21	-0.01	26	-0.02	26	-0.01
Runoff coefficient	19	0.03	19	0.01	10	0.05	10	0.02
Density of saturated zone	10	0.05	10	0.02	29	0.02	29	0.01
Saturated zone total porosity	36	-0.01	36	0.00	8	0.07	8	0.02
Saturated zone effective porosity	23	0.02	23	0.01	22	0.03	22	0.01
Saturated zone hydraulic conductivity	39	0.00	39	0.00	41	0.00	41	0.00
Saturated zone hydraulic gradient	40	0.00	40	0.00	40	0.00	40	0.00
Well pump intake depth	20	-0.03	20	-0.01	24	-0.03	24	-0.01
Mass loading for inhalation	25	-0.02	25	-0.01	36	0.00	36	0.00
Depth of soil mixing layer	5	-0.27	5	-0.10	4	-0.36	4	-0.13
Depth of roots	3	-0.54	3	-0.22	3	-0.53	3	-0.21
Weathering removal constant of all vegetation	27	0.02	27	0.01	38	0.00	38	0.00
Wet weight crop yield of fruit, grain and non-leafy vegetables	34	-0.01	34	0.00	27	0.02	27	0.01
Wet foliar interception fraction of leafy vegetables	16	0.03	17	0.01	35	0.01	35	0.00
Indoor dust filtration factor	15	-0.03	15	-0.01	34	0.01	34	0.00
External gamma shielding factor	1	0.92	1	0.79	1	0.93	1	0.84
Cover erosion rate	18	-0.03	18	-0.01	28	0.02	28	0.01
Total Porosity of Unsaturated zone 1	26	-0.02	26	-0.01	39	0.00	39	0.00
Effective Porosity of Unsaturated zone 1	38	0.01	38	0.00	9	0.06	9	0.02
Hydraulic Conductivity of Unsaturated zone 1	9	0.06	9	0.02	21	-0.03	21	-0.01
b Parameter of Unsaturated zone 1	13	0.04	13	0.01	14	0.04	14	0.01
Plant transfer factor for Co	35	-0.01	35	0.00	37	0.00	37	0.00
Meat transfer factor for Co	14	-0.03	14	-0.01	30	0.01	30	0.00
Milk transfer factor for Co	17	0.03	16	0.01	20	0.03	20	0.01
Plant transfer factor for Cs	2	0.77	2	0.41	2	0.63	2	0.28
Meat transfer factor for Cs	6	0.23	6	0.08	6	0.31	6	0.11
Milk transfer factor for Cs	4	0.30	4	0.11	5	0.31	5	0.11
Plant transfer factor for Ni	22	0.02	22	0.01	18	0.04	18	0.01
Meat transfer factor for Ni	30	0.01	30	0.00	13	-0.04	13	-0.01
Milk transfer factor for Ni	41	0.00	41	0.00	15	-0.04	15	-0.01
Plant transfer factor for Sr	29	-0.01	29	0.00	31	0.01	31	0.00
Meat transfer factor for Sr	31	0.01	31	0.00	16	0.04	16	0.01
Milk transfer factor for Sr	24	-0.02	24	-0.01	12	0.05	12	0.02
Density of contaminated zone	8	0.20	8	0.07	7	0.19	7	0.07
Density of Unsaturated zone 1	37	-0.01	37	0.00	23	0.03	23	0.01
R-SQUARE		0.89		0.89		0.89		0.89

-Rank is set to zero if the dose is zero or the correlation matrix is singular.

-R-SQUARE varies between 0 and 1 and is called the coefficient of determination; it provides a measure of the variation in the dependent variable (Dose) explained by regression on the independent variables.