

Summary : Hematite - Root CSM

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Dose Conversion Factor (and Related) Parameter Summary
 Dose Library: Hematite Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	DCF's for external ground radiation, (mrem/yr)/(pCi/g)			
A-1	Ac-225 (Source: FGR 12)	6.371E-02	6.371E-02	DCF1 (1)
A-1	Ac-227 (Source: FGR 12)	4.951E-04	4.951E-04	DCF1 (2)
A-1	Ac-228 (Source: FGR 12)	5.978E+00	5.978E+00	DCF1 (3)
A-1	Am-241 (Source: FGR 12)	4.372E-02	4.372E-02	DCF1 (4)
A-1	At-217 (Source: FGR 12)	1.773E-03	1.773E-03	DCF1 (5)
A-1	At-218 (Source: FGR 12)	5.847E-03	5.847E-03	DCF1 (6)
A-1	Bi-210 (Source: FGR 12)	3.606E-03	3.606E-03	DCF1 (7)
A-1	Bi-211 (Source: FGR 12)	2.559E-01	2.559E-01	DCF1 (8)
A-1	Bi-212 (Source: FGR 12)	1.171E+00	1.171E+00	DCF1 (9)
A-1	Bi-213 (Source: FGR 12)	7.660E-01	7.660E-01	DCF1 (10)
A-1	Bi-214 (Source: FGR 12)	9.808E+00	9.808E+00	DCF1 (11)
A-1	Fr-221 (Source: FGR 12)	1.536E-01	1.536E-01	DCF1 (12)
A-1	Fr-223 (Source: FGR 12)	1.980E-01	1.980E-01	DCF1 (13)
A-1	Np-237 (Source: FGR 12)	7.790E-02	7.790E-02	DCF1 (14)
A-1	Pa-231 (Source: FGR 12)	1.906E-01	1.906E-01	DCF1 (15)
A-1	Pa-233 (Source: FGR 12)	1.020E+00	1.020E+00	DCF1 (16)
A-1	Pa-234 (Source: FGR 12)	1.155E+01	1.155E+01	DCF1 (17)
A-1	Pa-234m (Source: FGR 12)	8.967E-02	8.967E-02	DCF1 (18)
A-1	Pb-209 (Source: FGR 12)	7.734E-04	7.734E-04	DCF1 (19)
A-1	Pb-210 (Source: FGR 12)	2.447E-03	2.447E-03	DCF1 (20)
A-1	Pb-211 (Source: FGR 12)	3.064E-01	3.064E-01	DCF1 (21)
A-1	Pb-212 (Source: FGR 12)	7.043E-01	7.043E-01	DCF1 (22)
A-1	Pb-214 (Source: FGR 12)	1.341E+00	1.341E+00	DCF1 (23)
A-1	Po-210 (Source: FGR 12)	5.231E-05	5.231E-05	DCF1 (24)
A-1	Po-211 (Source: FGR 12)	4.764E-02	4.764E-02	DCF1 (25)
A-1	Po-212 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 (26)
A-1	Po-213 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 (27)
A-1	Po-214 (Source: FGR 12)	5.138E-04	5.138E-04	DCF1 (28)
A-1	Po-215 (Source: FGR 12)	1.016E-03	1.016E-03	DCF1 (29)
A-1	Po-216 (Source: FGR 12)	1.042E-04	1.042E-04	DCF1 (30)
A-1	Po-218 (Source: FGR 12)	5.642E-05	5.642E-05	DCF1 (31)
A-1	Pu-239 (Source: FGR 12)	2.952E-04	2.952E-04	DCF1 (32)
A-1	Pu-240 (Source: FGR 12)	1.467E-04	1.467E-04	DCF1 (33)
A-1	Ra-223 (Source: FGR 12)	6.034E-01	6.034E-01	DCF1 (34)
A-1	Ra-224 (Source: FGR 12)	5.119E-02	5.119E-02	DCF1 (35)
A-1	Ra-225 (Source: FGR 12)	1.102E-02	1.102E-02	DCF1 (36)
A-1	Ra-226 (Source: FGR 12)	3.176E-02	3.176E-02	DCF1 (37)
A-1	Ra-228 (Source: FGR 12)	0.000E+00	0.000E+00	DCF1 (38)
A-1	Rn-219 (Source: FGR 12)	3.083E-01	3.083E-01	DCF1 (39)
A-1	Rn-220 (Source: FGR 12)	2.298E-03	2.298E-03	DCF1 (40)
A-1	Rn-222 (Source: FGR 12)	2.354E-03	2.354E-03	DCF1 (41)
A-1	Tc-99 (Source: FGR 12)	1.255E-04	1.255E-04	DCF1 (42)
A-1	Th-227 (Source: FGR 12)	5.212E-01	5.212E-01	DCF1 (43)
A-1	Th-228 (Source: FGR 12)	7.940E-03	7.940E-03	DCF1 (44)
A-1	Th-229 (Source: FGR 12)	3.213E-01	3.213E-01	DCF1 (45)
A-1	Th-230 (Source: FGR 12)	1.209E-03	1.209E-03	DCF1 (46)
A-1	Th-231 (Source: FGR 12)	3.643E-02	3.643E-02	DCF1 (47)
A-1	Th-232 (Source: FGR 12)	5.212E-04	5.212E-04	DCF1 (48)
A-1	Th-234 (Source: FGR 12)	2.410E-02	2.410E-02	DCF1 (49)

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Dose Conversion Factor (and Related) Parameter Summary (continued)
 Dose Library: Hematite Plus FGR 11

Menu	Parameter	Current Value#	Base Case*	Parameter Name
A-1	Tl-207 (Source: FGR 12)	1.980E-02	1.980E-02	DCF1 (50)
A-1	Tl-208 (Source: FGR 12)	2.298E+01	2.298E+01	DCF1 (51)
A-1	Tl-209 (Source: FGR 12)	1.293E+01	1.293E+01	DCF1 (52)
A-1	Tl-210 (Source: no data)	0.000E+00	-2.000E+00	DCF1 (53)
A-1	U-233 (Source: FGR 12)	1.397E-03	1.397E-03	DCF1 (54)
A-1	U-234 (Source: FGR 12)	4.017E-04	4.017E-04	DCF1 (55)
A-1	U-235 (Source: FGR 12)	7.211E-01	7.211E-01	DCF1 (56)
A-1	U-236 (Source: FGR 12)	2.148E-04	2.148E-04	DCF1 (57)
A-1	U-238 (Source: FGR 12)	1.031E-04	1.031E-04	DCF1 (58)
B-1	Dose conversion factors for inhalation, mrem/pCi:			
B-1	Ac-227+D	6.724E+00	6.700E+00	DCF2 (1)
B-1	Am-241	4.440E-01	4.440E-01	DCF2 (2)
B-1	Np-237+D	5.400E-01	5.400E-01	DCF2 (3)
B-1	Pa-231	1.280E+00	1.280E+00	DCF2 (4)
B-1	Pb-210+D	2.320E-02	1.360E-02	DCF2 (5)
B-1	Pu-239	4.290E-01	4.290E-01	DCF2 (6)
B-1	Pu-240	4.290E-01	4.290E-01	DCF2 (7)
B-1	Ra-226+D	8.594E-03	8.580E-03	DCF2 (9)
B-1	Ra-228+D	5.078E-03	4.770E-03	DCF2 (10)
B-1	Tc-99	8.320E-06	8.320E-06	DCF2 (11)
B-1	Th-228+D	3.454E-01	3.420E-01	DCF2 (12)
B-1	Th-229+D	2.169E+00	2.150E+00	DCF2 (13)
B-1	Th-230	3.260E-01	3.260E-01	DCF2 (14)
B-1	Th-232	1.640E+00	1.640E+00	DCF2 (15)
B-1	U-233	1.350E-01	1.350E-01	DCF2 (16)
B-1	U-234	1.320E-01	1.320E-01	DCF2 (17)
B-1	U-235+D	1.230E-01	1.230E-01	DCF2 (18)
B-1	U-236	1.250E-01	1.250E-01	DCF2 (19)
B-1	U-238	1.180E-01	1.180E-01	DCF2 (20)
B-1	U-238+D	1.180E-01	1.180E-01	DCF2 (21)
D-1	Dose conversion factors for ingestion, mrem/pCi:			
D-1	Ac-227+D	1.480E-02	1.410E-02	DCF3 (1)
D-1	Am-241	3.640E-03	3.640E-03	DCF3 (2)
D-1	Np-237+D	4.444E-03	4.440E-03	DCF3 (3)
D-1	Pa-231	1.060E-02	1.060E-02	DCF3 (4)
D-1	Pb-210+D	7.276E-03	5.370E-03	DCF3 (5)
D-1	Pu-239	3.540E-03	3.540E-03	DCF3 (6)
D-1	Pu-240	3.540E-03	3.540E-03	DCF3 (7)
D-1	Ra-226+D	1.321E-03	1.320E-03	DCF3 (9)
D-1	Ra-228+D	1.442E-03	1.440E-03	DCF3 (10)
D-1	Tc-99	1.460E-06	1.460E-06	DCF3 (11)
D-1	Th-228+D	8.086E-04	3.960E-04	DCF3 (12)
D-1	Th-229+D	4.027E-03	3.530E-03	DCF3 (13)
D-1	Th-230	5.480E-04	5.480E-04	DCF3 (14)
D-1	Th-232	2.730E-03	2.730E-03	DCF3 (15)
D-1	U-233	2.890E-04	2.890E-04	DCF3 (16)
D-1	U-234	2.830E-04	2.830E-04	DCF3 (17)
D-1	U-235+D	2.673E-04	2.660E-04	DCF3 (18)

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

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Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-1	U-236	2.690E-04	2.690E-04	DCF3 (19)
D-1	U-238	2.550E-04	2.550E-04	DCF3 (20)
D-1	U-238+D	2.687E-04	2.550E-04	DCF3 (21)
D-34	Food transfer factors:			
D-34	Ac-227+D , plant/soil concentration ratio, dimensionless	1.000E-03	2.500E-03	RTF(1,1)
D-34	Ac-227+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	2.000E-05	2.000E-05	RTF(1,2)
D-34	Ac-227+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-05	RTF(1,3)
D-34				
D-34	Am-241 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(2,1)
D-34	Am-241 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-05	5.000E-05	RTF(2,2)
D-34	Am-241 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	2.000E-06	2.000E-06	RTF(2,3)
D-34				
D-34	Np-237+D , plant/soil concentration ratio, dimensionless	2.000E-02	2.000E-02	RTF(3,1)
D-34	Np-237+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(3,2)
D-34	Np-237+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-05	5.000E-06	RTF(3,3)
D-34				
D-34	Pa-231 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-02	RTF(4,1)
D-34	Pa-231 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	5.000E-06	5.000E-03	RTF(4,2)
D-34	Pa-231 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(4,3)
D-34				
D-34	Pb-210+D , plant/soil concentration ratio, dimensionless	7.400E-03	1.000E-02	RTF(5,1)
D-34	Pb-210+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	8.000E-04	8.000E-04	RTF(5,2)
D-34	Pb-210+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	5.570E-04	3.000E-04	RTF(5,3)
D-34				
D-34	Pu-239 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(6,1)
D-34	Pu-239 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(6,2)
D-34	Pu-239 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	9.900E-07	1.000E-06	RTF(6,3)
D-34				
D-34	Pu-240 , plant/soil concentration ratio, dimensionless	1.000E-03	1.000E-03	RTF(7,1)
D-34	Pu-240 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-04	1.000E-04	RTF(7,2)
D-34	Pu-240 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	9.900E-07	1.000E-06	RTF(7,3)
D-34				
D-34	Ra-226+D , plant/soil concentration ratio, dimensionless	7.400E-02	4.000E-02	RTF(9,1)
D-34	Ra-226+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(9,2)
D-34	Ra-226+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-04	1.000E-03	RTF(9,3)
D-34				
D-34	Ra-228+D , plant/soil concentration ratio, dimensionless	7.400E-02	4.000E-02	RTF(10,1)
D-34	Ra-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.000E-03	1.000E-03	RTF(10,2)
D-34	Ra-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-04	1.000E-03	RTF(10,3)
D-34				
D-34	Tc-99 , plant/soil concentration ratio, dimensionless	9.270E+00	5.000E+00	RTF(11,1)
D-34	Tc-99 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(11,2)
D-34	Tc-99 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	1.000E-03	1.000E-03	RTF(11,3)
D-34				
D-34	Th-228+D , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(12,1)
D-34	Th-228+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(12,2)
D-34	Th-228+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(12,3)
D-34				

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

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Menu	Parameter	Current Value#	Base Case*	Parameter Name
D-34	Th-229+D , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(13,1)
D-34	Th-229+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(13,2)
D-34	Th-229+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(13,3)
D-34				
D-34	Th-230 , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(14,1)
D-34	Th-230 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(14,2)
D-34	Th-230 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(14,3)
D-34				
D-34	Th-232 , plant/soil concentration ratio, dimensionless	9.930E-04	1.000E-03	RTF(15,1)
D-34	Th-232 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	9.900E-05	1.000E-04	RTF(15,2)
D-34	Th-232 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	4.900E-06	5.000E-06	RTF(15,3)
D-34				
D-34	U-233 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(16,1)
D-34	U-233 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(16,2)
D-34	U-233 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(16,3)
D-34				
D-34	U-234 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(17,1)
D-34	U-234 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(17,2)
D-34	U-234 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(17,3)
D-34				
D-34	U-235+D , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(18,1)
D-34	U-235+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(18,2)
D-34	U-235+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(18,3)
D-34				
D-34	U-236 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(19,1)
D-34	U-236 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(19,2)
D-34	U-236 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(19,3)
D-34				
D-34	U-238 , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(20,1)
D-34	U-238 , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(20,2)
D-34	U-238 , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(20,3)
D-34				
D-34	U-238+D , plant/soil concentration ratio, dimensionless	3.700E-03	2.500E-03	RTF(21,1)
D-34	U-238+D , beef/livestock-intake ratio, (pCi/kg)/(pCi/d)	1.300E-03	3.400E-04	RTF(21,2)
D-34	U-238+D , milk/livestock-intake ratio, (pCi/L)/(pCi/d)	6.000E-04	6.000E-04	RTF(21,3)
D-34				
D-5	Bioaccumulation factors, fresh water, L/kg:			
D-5	Ac-227+D , fish	1.480E+01	1.500E+01	BIOFAC(1,1)
D-5	Ac-227+D , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(1,2)
D-5				
D-5	Am-241 , fish	2.970E+01	3.000E+01	BIOFAC(2,1)
D-5	Am-241 , crustacea and mollusks	1.000E+03	1.000E+03	BIOFAC(2,2)
D-5				
D-5	Np-237+D , fish	2.940E+01	3.000E+01	BIOFAC(3,1)
D-5	Np-237+D , crustacea and mollusks	4.000E+02	4.000E+02	BIOFAC(3,2)
D-5				
D-5	Pa-231 , fish	9.900E+00	1.000E+01	BIOFAC(4,1)
D-5	Pa-231 , crustacea and mollusks	1.100E+02	1.100E+02	BIOFAC(4,2)
D-5				

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

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D-5	Pb-210D , fish	2.930E+02	3.000E+02	BIOFAC(5,1)
D-5	Pb-210D , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(5,2)
D-5				
D-5	Pu-239 , fish	2.980E+01	3.000E+01	BIOFAC(6,1)
D-5	Pu-239 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(6,2)
D-5				
D-5	Pu-240 , fish	2.980E+01	3.000E+01	BIOFAC(7,1)
D-5	Pu-240 , crustacea and mollusks	1.000E+02	1.000E+02	BIOFAC(7,2)
D-5				
D-5	Ra-226D , fish	4.930E+01	5.000E+01	BIOFAC(9,1)
D-5	Ra-226D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(9,2)
D-5				
D-5	Ra-228D , fish	4.930E+01	5.000E+01	BIOFAC(10,1)
D-5	Ra-228D , crustacea and mollusks	2.500E+02	2.500E+02	BIOFAC(10,2)
D-5				
D-5	Tc-99 , fish	2.000E+01	2.000E+01	BIOFAC(11,1)
D-5	Tc-99 , crustacea and mollusks	5.000E+00	5.000E+00	BIOFAC(11,2)
D-5				
D-5	Th-228D , fish	9.030E+01	1.000E+02	BIOFAC(12,1)
D-5	Th-228D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(12,2)
D-5				
D-5	Th-229D , fish	9.030E+01	1.000E+02	BIOFAC(13,1)
D-5	Th-229D , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(13,2)
D-5				
D-5	Th-230 , fish	9.030E+01	1.000E+02	BIOFAC(14,1)
D-5	Th-230 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(14,2)
D-5				
D-5	Th-232 , fish	9.030E+01	1.000E+02	BIOFAC(15,1)
D-5	Th-232 , crustacea and mollusks	5.000E+02	5.000E+02	BIOFAC(15,2)
D-5				
D-5	U-233 , fish	9.900E+00	1.000E+01	BIOFAC(16,1)
D-5	U-233 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(16,2)
D-5				
D-5	U-234 , fish	9.900E+00	1.000E+01	BIOFAC(17,1)
D-5	U-234 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(17,2)
D-5				
D-5	U-235D , fish	9.900E+00	1.000E+01	BIOFAC(18,1)
D-5	U-235D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(18,2)
D-5				
D-5	U-236 , fish	9.900E+00	1.000E+01	BIOFAC(19,1)
D-5	U-236 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(19,2)
D-5				
D-5	U-238 , fish	9.900E+00	1.000E+01	BIOFAC(20,1)
D-5	U-238 , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(20,2)
D-5				
D-5	U-238D , fish	9.900E+00	1.000E+01	BIOFAC(21,1)
D-5	U-238D , crustacea and mollusks	6.000E+01	6.000E+01	BIOFAC(21,2)

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

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

Summary : Hematite - Root CSM

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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)	1.534E+05	1.000E+04	---	AREA
R011	Thickness of contaminated zone (m)	1.350E+00	2.000E+00	---	THICKO
R011	Length parallel to aquifer flow (m)	2.910E+02	1.000E+02	---	LCZPAQ
R011	Basic radiation dose limit (mrem/yr)	2.500E+01	3.000E+01	---	BRDL
R011	Time since placement of material (yr)	0.000E+00	0.000E+00	---	TI
R011	Times for calculations (yr)	1.000E+00	1.000E+00	---	T(2)
R011	Times for calculations (yr)	3.000E+00	3.000E+00	---	T(3)
R011	Times for calculations (yr)	1.000E+01	1.000E+01	---	T(4)
R011	Times for calculations (yr)	3.000E+01	3.000E+01	---	T(5)
R011	Times for calculations (yr)	1.000E+02	1.000E+02	---	T(6)
R011	Times for calculations (yr)	3.000E+02	3.000E+02	---	T(7)
R011	Times for calculations (yr)	1.000E+03	1.000E+03	---	T(8)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(9)
R011	Times for calculations (yr)	not used	0.000E+00	---	T(10)
R012	Initial principal radionuclide (pCi/g): Am-241	1.000E+00	0.000E+00	---	S1(2)
R012	Initial principal radionuclide (pCi/g): Np-237	1.000E+00	0.000E+00	---	S1(3)
R012	Initial principal radionuclide (pCi/g): Pu-239	1.000E+00	0.000E+00	---	S1(6)
R012	Initial principal radionuclide (pCi/g): Pu-240	1.000E+00	0.000E+00	---	S1(7)
R012	Initial principal radionuclide (pCi/g): Tc-99	1.000E+00	0.000E+00	---	S1(11)
R012	Initial principal radionuclide (pCi/g): U-234	1.000E+00	0.000E+00	---	S1(17)
R012	Initial principal radionuclide (pCi/g): U-235	1.000E+00	0.000E+00	---	S1(18)
R012	Initial principal radionuclide (pCi/g): U-238	1.000E+00	0.000E+00	---	S1(20)
R012	Concentration in groundwater (pCi/L): Am-241	not used	0.000E+00	---	W1(2)
R012	Concentration in groundwater (pCi/L): Np-237	not used	0.000E+00	---	W1(3)
R012	Concentration in groundwater (pCi/L): Pu-239	not used	0.000E+00	---	W1(6)
R012	Concentration in groundwater (pCi/L): Pu-240	not used	0.000E+00	---	W1(7)
R012	Concentration in groundwater (pCi/L): Tc-99	not used	0.000E+00	---	W1(11)
R012	Concentration in groundwater (pCi/L): U-234	not used	0.000E+00	---	W1(17)
R012	Concentration in groundwater (pCi/L): U-235	not used	0.000E+00	---	W1(18)
R012	Concentration in groundwater (pCi/L): U-238	not used	0.000E+00	---	W1(20)
R013	Cover depth (m)	1.500E-01	0.000E+00	---	COVERO
R013	Density of cover material (g/cm**3)	1.690E+00	1.500E+00	---	DENSCV
R013	Cover depth erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCV
R013	Density of contaminated zone (g/cm**3)	1.690E+00	1.500E+00	---	DENSCZ
R013	Contaminated zone erosion rate (m/yr)	6.000E-04	1.000E-03	---	VCZ
R013	Contaminated zone total porosity	4.500E-01	4.000E-01	---	TPCZ
R013	Contaminated zone field capacity	1.700E-01	2.000E-01	---	FCCZ
R013	Contaminated zone hydraulic conductivity (m/yr)	1.456E+01	1.000E+01	---	HCCZ
R013	Contaminated zone b parameter	9.900E+00	5.300E+00	---	BCZ
R013	Average annual wind speed (m/sec)	4.300E+00	2.000E+00	---	WIND
R013	Humidity in air (g/m**3)	not used	8.000E+00	---	HUMID
R013	Evapotranspiration coefficient	8.000E-01	5.000E-01	---	EVAPTR
R013	Precipitation (m/yr)	1.010E+00	1.000E+00	---	PRECIP
R013	Irrigation (m/yr)	1.400E-01	2.000E-01	---	RI
R013	Irrigation mode	overhead	overhead	---	IDITCH
R013	Runoff coefficient	4.000E-01	2.000E-01	---	RUNOFF
R013	Watershed area for nearby stream or pond (m**2)	9.989E+05	1.000E+06	---	WAREA
R013	Accuracy for water/soil computations	1.000E-03	1.000E-03	---	EPS

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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	Density of saturated zone (g/cm**3)	1.510E+00	1.500E+00	---	DENSAQ
R014	Saturated zone total porosity	4.300E-01	4.000E-01	---	TPSZ
R014	Saturated zone effective porosity	3.800E-01	2.000E-01	---	EPSZ
R014	Saturated zone field capacity	1.500E-01	2.000E-01	---	FCSZ
R014	Saturated zone hydraulic conductivity (m/yr)	2.520E+03	1.000E+02	---	HCSZ
R014	Saturated zone hydraulic gradient	1.100E-02	2.000E-02	---	HGWT
R014	Saturated zone b parameter	not used	5.300E+00	---	BSZ
R014	Water table drop rate (m/yr)	0.000E+00	1.000E-03	---	VWT
R014	Well pump intake depth (m below water table)	2.500E+00	1.000E+01	---	DWIBWT
R014	Model: Nondispersion (ND) or Mass-Balance (MB)	ND	ND	---	MODEL
R014	Well pumping rate (m**3/yr)	3.338E+03	2.500E+02	---	UW
R015	Number of unsaturated zone strata	1	1	---	NS
R015	Unsat. zone 1, thickness (m)	7.600E+00	4.000E+00	---	H (1)
R015	Unsat. zone 1, soil density (g/cm**3)	1.690E+00	1.500E+00	---	DENSUZ (1)
R015	Unsat. zone 1, total porosity	4.500E-01	4.000E-01	---	TPUZ (1)
R015	Unsat. zone 1, effective porosity	2.900E-01	2.000E-01	---	EPUZ (1)
R015	Unsat. zone 1, field capacity	1.700E-01	2.000E-01	---	FCUZ (1)
R015	Unsat. zone 1, soil-specific b parameter	9.900E+00	5.300E+00	---	BUZ (1)
R015	Unsat. zone 1, hydraulic conductivity (m/yr)	1.456E+01	1.000E+01	---	HCUZ (1)
R016	Distribution coefficients for Am-241				
R016	Contaminated zone (cm**3/g)	8.400E+03	2.000E+01	---	DCNUCC (2)
R016	Unsat. zone 1 (cm**3/g)	8.400E+03	2.000E+01	---	DCNUCU (2,1)
R016	Saturated zone (cm**3/g)	1.900E+03	2.000E+01	---	DCNUCS (2)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.785E-06	ALEACH (2)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (2)
R016	Distribution coefficients for Np-237				
R016	Contaminated zone (cm**3/g)	2.500E+01	-1.000E+00	---	DCNUCC (3)
R016	Unsat. zone 1 (cm**3/g)	2.500E+01	-1.000E+00	---	DCNUCU (3,1)
R016	Saturated zone (cm**3/g)	5.000E+00	-1.000E+00	---	DCNUCS (3)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	2.593E-03	ALEACH (3)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (3)
R016	Distribution coefficients for Pu-239				
R016	Contaminated zone (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCC (6)
R016	Unsat. zone 1 (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCU (6,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (6)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.449E-05	ALEACH (6)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (6)
R016	Distribution coefficients for Pu-240				
R016	Contaminated zone (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCC (7)
R016	Unsat. zone 1 (cm**3/g)	1.200E+03	2.000E+03	---	DCNUCU (7,1)
R016	Saturated zone (cm**3/g)	5.500E+02	2.000E+03	---	DCNUCS (7)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	5.449E-05	ALEACH (7)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (7)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for Tc-99				
R016	Contaminated zone (cm**3/g)	1.060E+02	0.000E+00	---	DCNUCC (11)
R016	Unsaturated zone 1 (cm**3/g)	1.060E+02	0.000E+00	---	DCNUCU (11,1)
R016	Saturated zone (cm**3/g)	1.000E-01	0.000E+00	---	DCNUCS (11)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	6.157E-04	ALEACH (11)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (11)
R016	Distribution coefficients for U-234				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (17)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (17,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (17)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.732E-04	ALEACH (17)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (17)
R016	Distribution coefficients for U-235				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (18)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (18,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (18)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.732E-04	ALEACH (18)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (18)
R016	Distribution coefficients for U-238				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (20)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (20,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (20)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.732E-04	ALEACH (20)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (20)
R016	Distribution coefficients for daughter Ac-227				
R016	Contaminated zone (cm**3/g)	1.500E+03	2.000E+01	---	DCNUCC (1)
R016	Unsaturated zone 1 (cm**3/g)	1.500E+03	2.000E+01	---	DCNUCU (1,1)
R016	Saturated zone (cm**3/g)	4.500E+02	2.000E+01	---	DCNUCS (1)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	4.359E-05	ALEACH (1)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (1)
R016	Distribution coefficients for daughter Pa-231				
R016	Contaminated zone (cm**3/g)	1.800E+03	5.000E+01	---	DCNUCC (4)
R016	Unsaturated zone 1 (cm**3/g)	1.800E+03	5.000E+01	---	DCNUCU (4,1)
R016	Saturated zone (cm**3/g)	5.500E+02	5.000E+01	---	DCNUCS (4)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.633E-05	ALEACH (4)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (4)
R016	Distribution coefficients for daughter Pb-210				
R016	Contaminated zone (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCC (5)
R016	Unsaturated zone 1 (cm**3/g)	5.500E+02	1.000E+02	---	DCNUCU (5,1)
R016	Saturated zone (cm**3/g)	2.700E+02	1.000E+02	---	DCNUCS (5)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.189E-04	ALEACH (5)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (5)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter Ra-226				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC (9)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU (9,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (9)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.186E-06	ALEACH (9)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (9)
R016	Distribution coefficients for daughter Ra-228				
R016	Contaminated zone (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCC (10)
R016	Unsaturated zone 1 (cm**3/g)	9.100E+03	7.000E+01	---	DCNUCU (10,1)
R016	Saturated zone (cm**3/g)	5.000E+02	7.000E+01	---	DCNUCS (10)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	7.186E-06	ALEACH (10)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (10)
R016	Distribution coefficients for daughter Th-228				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (12)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (12,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (12)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.982E-05	ALEACH (12)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (12)
R016	Distribution coefficients for daughter Th-229				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (13)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (13,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (13)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.982E-05	ALEACH (13)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (13)
R016	Distribution coefficients for daughter Th-230				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (14)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (14,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (14)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.982E-05	ALEACH (14)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (14)
R016	Distribution coefficients for daughter Th-232				
R016	Contaminated zone (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCC (15)
R016	Unsaturated zone 1 (cm**3/g)	3.300E+03	6.000E+04	---	DCNUCU (15,1)
R016	Saturated zone (cm**3/g)	3.200E+03	6.000E+04	---	DCNUCS (15)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	1.982E-05	ALEACH (15)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (15)
R016	Distribution coefficients for daughter U-233				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (16)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (16,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (16)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.732E-04	ALEACH (16)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (16)

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
R016	Distribution coefficients for daughter U-236				
R016	Contaminated zone (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCC (19)
R016	Unsaturated zone 1 (cm**3/g)	1.750E+02	5.000E+01	---	DCNUCU (19,1)
R016	Saturated zone (cm**3/g)	3.500E+01	5.000E+01	---	DCNUCS (19)
R016	Leach rate (/yr)	0.000E+00	0.000E+00	3.732E-04	ALEACH (19)
R016	Solubility constant	0.000E+00	0.000E+00	not used	SOLUBK (19)
R017	Inhalation rate (m**3/yr)	8.400E+03	8.400E+03	---	INHALR
R017	Mass loading for inhalation (g/m**3)	2.300E-05	1.000E-04	---	MLINH
R017	Exposure duration	3.000E+01	3.000E+01	---	ED
R017	Shielding factor, inhalation	5.500E-01	4.000E-01	---	SHF3
R017	Shielding factor, external gamma	2.000E-01	7.000E-01	---	SHF1
R017	Fraction of time spent indoors	6.600E-01	5.000E-01	---	FIND
R017	Fraction of time spent outdoors (on site)	1.200E-01	2.500E-01	---	FOTD
R017	Shape factor flag, external gamma	1.000E+00	1.000E+00	>0 shows circular AREA.	FS
R017	Radii of shape factor array (used if FS = -1):				
R017	Outer annular radius (m), ring 1:	not used	5.000E+01	---	RAD_SHAPE (1)
R017	Outer annular radius (m), ring 2:	not used	7.071E+01	---	RAD_SHAPE (2)
R017	Outer annular radius (m), ring 3:	not used	0.000E+00	---	RAD_SHAPE (3)
R017	Outer annular radius (m), ring 4:	not used	0.000E+00	---	RAD_SHAPE (4)
R017	Outer annular radius (m), ring 5:	not used	0.000E+00	---	RAD_SHAPE (5)
R017	Outer annular radius (m), ring 6:	not used	0.000E+00	---	RAD_SHAPE (6)
R017	Outer annular radius (m), ring 7:	not used	0.000E+00	---	RAD_SHAPE (7)
R017	Outer annular radius (m), ring 8:	not used	0.000E+00	---	RAD_SHAPE (8)
R017	Outer annular radius (m), ring 9:	not used	0.000E+00	---	RAD_SHAPE (9)
R017	Outer annular radius (m), ring 10:	not used	0.000E+00	---	RAD_SHAPE(10)
R017	Outer annular radius (m), ring 11:	not used	0.000E+00	---	RAD_SHAPE(11)
R017	Outer annular radius (m), ring 12:	not used	0.000E+00	---	RAD_SHAPE(12)
R017	Fractions of annular areas within AREA:				
R017	Ring 1	not used	1.000E+00	---	FRACA (1)
R017	Ring 2	not used	2.732E-01	---	FRACA (2)
R017	Ring 3	not used	0.000E+00	---	FRACA (3)
R017	Ring 4	not used	0.000E+00	---	FRACA (4)
R017	Ring 5	not used	0.000E+00	---	FRACA (5)
R017	Ring 6	not used	0.000E+00	---	FRACA (6)
R017	Ring 7	not used	0.000E+00	---	FRACA (7)
R017	Ring 8	not used	0.000E+00	---	FRACA (8)
R017	Ring 9	not used	0.000E+00	---	FRACA (9)
R017	Ring 10	not used	0.000E+00	---	FRACA(10)
R017	Ring 11	not used	0.000E+00	---	FRACA(11)
R017	Ring 12	not used	0.000E+00	---	FRACA(12)
R018	Fruits, vegetables and grain consumption (kg/yr)	1.120E+02	1.600E+02	---	DIET(1)
R018	Leafy vegetable consumption (kg/yr)	2.100E+01	1.400E+01	---	DIET(2)
R018	Milk consumption (L/yr)	2.330E+02	9.200E+01	---	DIET(3)
R018	Meat and poultry consumption (kg/yr)	6.500E+01	6.300E+01	---	DIET(4)
R018	Fish consumption (kg/yr)	2.100E+01	5.400E+00	---	DIET(5)
R018	Other seafood consumption (kg/yr)	9.000E-01	9.000E-01	---	DIET(6)
R018	Soil ingestion rate (g/yr)	1.820E+01	3.650E+01	---	SOIL

Summary : Hematite - Root CSM

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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	Drinking water intake (L/yr)	4.600E+02	5.100E+02	---	DWI
R018	Contamination fraction of drinking water	1.000E+00	1.000E+00	---	FDW
R018	Contamination fraction of household water	not used	1.000E+00	---	FHHW
R018	Contamination fraction of livestock water	1.000E+00	1.000E+00	---	FLW
R018	Contamination fraction of irrigation water	1.000E+00	1.000E+00	---	FIRW
R018	Contamination fraction of aquatic food	1.000E+00	5.000E-01	---	FR9
R018	Contamination fraction of plant food	-1	-1	0.500E+00	FPLANT
R018	Contamination fraction of meat	-1	-1	0.100E+01	FMEAT
R018	Contamination fraction of milk	-1	-1	0.100E+01	FMILK
R019	Livestock fodder intake for meat (kg/day)	1.200E+01	6.800E+01	---	LFI5
R019	Livestock fodder intake for milk (kg/day)	9.000E+00	5.500E+01	---	LFI6
R019	Livestock water intake for meat (L/day)	3.700E+01	5.000E+01	---	LWI5
R019	Livestock water intake for milk (L/day)	1.050E+02	1.600E+02	---	LWI6
R019	Livestock soil intake (kg/day)	4.500E-01	5.000E-01	---	LSI
R019	Mass loading for foliar deposition (g/m**3)	2.300E-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	1.000E+00	1.000E+00	---	FGWLW
R019	Irrigation fraction from ground water	1.000E+00	1.000E+00	---	FGWIR
R19B	Wet weight crop yield for Non-Leafy (kg/m**2)	1.750E+00	7.000E-01	---	YV(1)
R19B	Wet weight crop yield for Leafy (kg/m**2)	1.500E+00	1.500E+00	---	YV(2)
R19B	Wet weight crop yield for Fodder (kg/m**2)	1.100E+00	1.100E+00	---	YV(3)
R19B	Growing Season for Non-Leafy (years)	2.600E-01	1.700E-01	---	TE(1)
R19B	Growing Season for Leafy (years)	1.700E-01	2.500E-01	---	TE(2)
R19B	Growing Season for Fodder (years)	2.100E-01	8.000E-02	---	TE(3)
R19B	Translocation Factor for Non-Leafy	1.000E-01	1.000E-01	---	TIV(1)
R19B	Translocation Factor for Leafy	1.000E+00	1.000E+00	---	TIV(2)
R19B	Translocation Factor for Fodder	1.000E+00	1.000E+00	---	TIV(3)
R19B	Dry Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RDRY(1)
R19B	Dry Foliar Interception Fraction for Leafy	2.500E-01	2.500E-01	---	RDRY(2)
R19B	Dry Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RDRY(3)
R19B	Wet Foliar Interception Fraction for Non-Leafy	2.500E-01	2.500E-01	---	RWET(1)
R19B	Wet Foliar Interception Fraction for Leafy	6.000E-01	2.500E-01	---	RWET(2)
R19B	Wet Foliar Interception Fraction for Fodder	2.500E-01	2.500E-01	---	RWET(3)
R19B	Weathering Removal Constant for Vegetation	3.300E+01	2.000E+01	---	WLAM
C14	C-12 concentration in water (g/cm**3)	not used	2.000E-05	---	C12WTR
C14	C-12 concentration in contaminated soil (g/g)	not used	3.000E-02	---	C12CZ
C14	Fraction of vegetation carbon from soil	not used	2.000E-02	---	CSOIL
C14	Fraction of vegetation carbon from air	not used	9.800E-01	---	CAIR
C14	C-14 evasion layer thickness in soil (m)	not used	3.000E-01	---	DMC
C14	C-14 evasion flux rate from soil (1/sec)	not used	7.000E-07	---	EVSN
C14	C-12 evasion flux rate from soil (1/sec)	not used	1.000E-10	---	REVSN
C14	Fraction of grain in beef cattle feed	not used	8.000E-01	---	AVFG4
C14	Fraction of grain in milk cow feed	not used	2.000E-01	---	AVFG5

Summary : Hematite - Root CSM

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Site-Specific Parameter Summary (continued)

Menu	Parameter	User Input	Default	Used by RESRAD (If different from user input)	Parameter Name
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	128	---	---	NPTS
TITL	Maximum number of integration points for dose	5	---	---	LYMAX
TITL	Maximum number of integration points for risk	1	---	---	KYMAX

Summary of Pathway Selections

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

Summary : Hematite - Root CSM

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Contaminated Zone Dimensions	Initial Soil Concentrations, pCi/g	
Area: 153375.00 square meters	Am-241	1.000E+00
Thickness: 1.35 meters	Np-237	1.000E+00
Cover Depth: 0.15 meters	Pu-239	1.000E+00
	Pu-240	1.000E+00
	Tc-99	1.000E+00
	U-234	1.000E+00
	U-235	1.000E+00
	U-238	1.000E+00

Total Dose TDOSE(t), mrem/yr

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

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

t (years):	0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
TDOSE(t):	6.545E+00	6.538E+00	6.525E+00	6.481E+00	6.357E+00	5.958E+00	5.004E+00	2.012E+00
M(t):	2.618E-01	2.615E-01	2.610E-01	2.592E-01	2.543E-01	2.383E-01	2.001E-01	8.047E-02

Maximum TDOSE(t): 6.545E+00 mrem/yr at t = 0.000E+00 years

Summary : Hematite - Root CSM

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\HEMATITE - ROOT CSM.RAD

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.351E-06	0.0000	8.771E-06	0.0000	0.000E+00	0.0000	2.016E-01	0.0308	1.278E-04	0.0000	1.423E-05	0.0000	1.032E-04	0.0000
Np-237	1.216E-02	0.0019	1.066E-05	0.0000	0.000E+00	0.0000	4.921E+00	0.7519	5.797E-02	0.0089	1.561E-03	0.0002	1.259E-04	0.0000
Pu-239	1.956E-06	0.0000	8.483E-06	0.0000	0.000E+00	0.0000	1.962E-01	0.0300	2.488E-04	0.0000	6.857E-06	0.0000	1.005E-04	0.0000
Pu-240	4.434E-08	0.0000	8.483E-06	0.0000	0.000E+00	0.0000	1.962E-01	0.0300	2.488E-04	0.0000	6.857E-06	0.0000	1.005E-04	0.0000
Tc-99	1.196E-07	0.0000	1.645E-10	0.0000	0.000E+00	0.0000	7.501E-01	0.1146	8.710E-04	0.0001	2.365E-02	0.0036	4.144E-08	0.0000
U-234	5.408E-07	0.0000	2.610E-06	0.0000	0.000E+00	0.0000	5.804E-02	0.0089	9.043E-04	0.0001	1.133E-03	0.0002	8.033E-06	0.0000
U-235	5.221E-03	0.0008	2.432E-06	0.0000	0.000E+00	0.0000	5.484E-02	0.0084	8.543E-04	0.0001	1.071E-03	0.0002	7.593E-06	0.0000
U-238	3.041E-03	0.0005	2.334E-06	0.0000	0.000E+00	0.0000	5.511E-02	0.0084	8.586E-04	0.0001	1.076E-03	0.0002	7.627E-06	0.0000
Total	2.043E-02	0.0031	4.377E-05	0.0000	0.000E+00	0.0000	6.433E+00	0.9830	6.208E-02	0.0095	2.852E-02	0.0044	4.535E-04	0.0001

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

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.019E-01	0.0308
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.993E+00	0.7629
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.966E-01	0.0300
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.966E-01	0.0300
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.746E-01	0.1184
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.009E-02	0.0092
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.199E-02	0.0095
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.009E-02	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.545E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.457E-06	0.0000	2.628E-05	0.0000	0.000E+00	0.0000	2.015E-01	0.0308	1.489E-04	0.0000	1.727E-05	0.0000	3.093E-04	0.0000
Np-237	1.228E-02	0.0019	3.191E-05	0.0000	0.000E+00	0.0000	4.912E+00	0.7513	5.838E-02	0.0089	1.577E-03	0.0002	3.770E-04	0.0001
Pu-239	1.982E-06	0.0000	2.545E-05	0.0000	0.000E+00	0.0000	1.964E-01	0.0300	2.902E-04	0.0000	8.331E-06	0.0000	3.015E-04	0.0000
Pu-240	4.532E-08	0.0000	2.544E-05	0.0000	0.000E+00	0.0000	1.964E-01	0.0300	2.901E-04	0.0000	8.330E-06	0.0000	3.014E-04	0.0000
Tc-99	1.221E-07	0.0000	4.931E-10	0.0000	0.000E+00	0.0000	7.502E-01	0.1147	8.712E-04	0.0001	2.366E-02	0.0036	1.242E-07	0.0000
U-234	5.527E-07	0.0000	7.827E-06	0.0000	0.000E+00	0.0000	5.806E-02	0.0089	9.475E-04	0.0001	1.205E-03	0.0002	2.409E-05	0.0000
U-235	5.293E-03	0.0008	7.296E-06	0.0000	0.000E+00	0.0000	5.487E-02	0.0084	8.951E-04	0.0001	1.138E-03	0.0002	2.279E-05	0.0000
U-238	3.068E-03	0.0005	6.999E-06	0.0000	0.000E+00	0.0000	5.513E-02	0.0084	8.996E-04	0.0001	1.144E-03	0.0002	2.287E-05	0.0000
Total	2.064E-02	0.0032	1.312E-04	0.0000	0.000E+00	0.0000	6.425E+00	0.9826	6.272E-02	0.0096	2.876E-02	0.0044	1.359E-03	0.0002

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

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.020E-01	0.0309
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.985E+00	0.7624
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.970E-01	0.0301
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.970E-01	0.0301
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.747E-01	0.1185
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.025E-02	0.0092
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.223E-02	0.0095
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.027E-02	0.0092
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.538E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	3.680E-06	0.0000	6.111E-05	0.0000	0.000E+00	0.0000	2.011E-01	0.0308	1.910E-04	0.0000	2.330E-05	0.0000	7.193E-04	0.0001
Np-237	1.251E-02	0.0019	7.407E-05	0.0000	0.000E+00	0.0000	4.894E+00	0.7501	5.920E-02	0.0091	1.608E-03	0.0002	8.751E-04	0.0001
Pu-239	2.037E-06	0.0000	5.937E-05	0.0000	0.000E+00	0.0000	1.967E-01	0.0301	3.733E-04	0.0001	1.128E-05	0.0000	7.033E-04	0.0001
Pu-240	4.736E-08	0.0000	5.935E-05	0.0000	0.000E+00	0.0000	1.966E-01	0.0301	3.732E-04	0.0001	1.128E-05	0.0000	7.032E-04	0.0001
Tc-99	1.272E-07	0.0000	1.149E-09	0.0000	0.000E+00	0.0000	7.505E-01	0.1150	8.715E-04	0.0001	2.367E-02	0.0036	2.895E-07	0.0000
U-234	5.816E-07	0.0000	1.825E-05	0.0000	0.000E+00	0.0000	5.811E-02	0.0089	1.034E-03	0.0002	1.348E-03	0.0002	5.617E-05	0.0000
U-235	5.440E-03	0.0008	1.702E-05	0.0000	0.000E+00	0.0000	5.495E-02	0.0084	9.770E-04	0.0001	1.274E-03	0.0002	5.323E-05	0.0000
U-238	3.123E-03	0.0005	1.632E-05	0.0000	0.000E+00	0.0000	5.518E-02	0.0085	9.819E-04	0.0002	1.280E-03	0.0002	5.333E-05	0.0000
Total	2.108E-02	0.0032	3.055E-04	0.0000	0.000E+00	0.0000	6.408E+00	0.9820	6.400E-02	0.0098	2.922E-02	0.0045	3.164E-03	0.0005

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+00 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.021E-01	0.0310
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.969E+00	0.7614
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.978E-01	0.0303
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.978E-01	0.0303
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.750E-01	0.1188
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.057E-02	0.0093
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.271E-02	0.0096
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.063E-02	0.0093
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.525E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	4.572E-06	0.0000	1.813E-04	0.0000	0.000E+00	0.0000	2.000E-01	0.0309	3.362E-04	0.0001	4.413E-05	0.0000	2.134E-03	0.0003
Np-237	1.337E-02	0.0021	2.182E-04	0.0000	0.000E+00	0.0000	4.833E+00	0.7458	6.199E-02	0.0096	1.715E-03	0.0003	2.578E-03	0.0004
Pu-239	2.241E-06	0.0000	1.780E-04	0.0000	0.000E+00	0.0000	1.976E-01	0.0305	6.640E-04	0.0001	2.159E-05	0.0000	2.109E-03	0.0003
Pu-240	5.522E-08	0.0000	1.779E-04	0.0000	0.000E+00	0.0000	1.975E-01	0.0305	6.635E-04	0.0001	2.157E-05	0.0000	2.107E-03	0.0003
Tc-99	1.472E-07	0.0000	3.433E-09	0.0000	0.000E+00	0.0000	7.514E-01	0.1159	8.727E-04	0.0001	2.370E-02	0.0037	8.649E-07	0.0000
U-234	7.387E-07	0.0000	5.461E-05	0.0000	0.000E+00	0.0000	5.829E-02	0.0090	1.337E-03	0.0002	1.847E-03	0.0003	1.681E-04	0.0000
U-235	5.988E-03	0.0009	5.109E-05	0.0000	0.000E+00	0.0000	5.522E-02	0.0085	1.263E-03	0.0002	1.745E-03	0.0003	1.605E-04	0.0000
U-238	3.323E-03	0.0005	4.883E-05	0.0000	0.000E+00	0.0000	5.534E-02	0.0085	1.269E-03	0.0002	1.754E-03	0.0003	1.596E-04	0.0000
Total	2.269E-02	0.0035	9.099E-04	0.0001	0.000E+00	0.0000	6.349E+00	0.9796	6.840E-02	0.0106	3.085E-02	0.0048	9.417E-03	0.0015

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

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.027E-01	0.0313
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.913E+00	0.7581
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.006E-01	0.0310
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.005E-01	0.0309
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.760E-01	0.1197
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.169E-02	0.0095
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.443E-02	0.0099
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.190E-02	0.0096
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.481E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	8.431E-06	0.0000	5.099E-04	0.0001	0.000E+00	0.0000	1.968E-01	0.0310	7.333E-04	0.0001	1.011E-04	0.0000	6.002E-03	0.0009
Np-237	1.616E-02	0.0025	6.019E-04	0.0001	0.000E+00	0.0000	4.662E+00	0.7334	6.932E-02	0.0109	1.996E-03	0.0003	7.111E-03	0.0011
Pu-239	2.942E-06	0.0000	5.162E-04	0.0001	0.000E+00	0.0000	2.004E-01	0.0315	1.493E-03	0.0002	5.097E-05	0.0000	6.115E-03	0.0010
Pu-240	8.564E-08	0.0000	5.150E-04	0.0001	0.000E+00	0.0000	2.000E-01	0.0315	1.489E-03	0.0002	5.085E-05	0.0000	6.101E-03	0.0010
Tc-99	2.230E-07	0.0000	9.849E-09	0.0000	0.000E+00	0.0000	7.539E-01	0.1186	8.760E-04	0.0001	2.379E-02	0.0037	2.481E-06	0.0000
U-234	1.778E-06	0.0000	1.575E-04	0.0000	0.000E+00	0.0000	5.878E-02	0.0092	2.192E-03	0.0003	3.259E-03	0.0005	4.848E-04	0.0001
U-235	7.883E-03	0.0012	1.496E-04	0.0000	0.000E+00	0.0000	5.610E-02	0.0088	2.071E-03	0.0003	3.080E-03	0.0005	4.755E-04	0.0001
U-238	3.970E-03	0.0006	1.408E-04	0.0000	0.000E+00	0.0000	5.581E-02	0.0088	2.081E-03	0.0003	3.095E-03	0.0005	4.601E-04	0.0001
Total	2.802E-02	0.0044	2.591E-03	0.0004	0.000E+00	0.0000	6.184E+00	0.9728	8.026E-02	0.0126	3.542E-02	0.0056	2.675E-02	0.0042

Total Dose Contributions TDOSE(i,p,t) for Individual Radionuclides (i) and Pathways (p)
As mrem/yr and Fraction of Total Dose At t = 3.000E+01 years

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.041E-01	0.0321
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.757E+00	0.7483
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.086E-01	0.0328
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.081E-01	0.0327
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.786E-01	0.1225
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.488E-02	0.0102
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.976E-02	0.0110
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.555E-02	0.0103
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.357E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.920E-05	0.0000	1.501E-03	0.0003	0.000E+00	0.0000	1.855E-01	0.0311	1.931E-03	0.0003	2.727E-04	0.0000	1.767E-02	0.0030
Np-237	3.145E-02	0.0053	1.654E-03	0.0003	0.000E+00	0.0000	4.100E+00	0.6882	8.835E-02	0.0148	2.740E-03	0.0005	1.954E-02	0.0033
Pu-239	7.626E-06	0.0000	1.691E-03	0.0003	0.000E+00	0.0000	2.102E-01	0.0353	4.372E-03	0.0007	1.530E-04	0.0000	2.003E-02	0.0034
Pu-240	3.980E-07	0.0000	1.678E-03	0.0003	0.000E+00	0.0000	2.086E-01	0.0350	4.338E-03	0.0007	1.519E-04	0.0000	1.988E-02	0.0033
Tc-99	9.547E-07	0.0000	3.108E-08	0.0000	0.000E+00	0.0000	7.615E-01	0.1278	8.858E-04	0.0001	2.407E-02	0.0040	7.829E-06	0.0000
U-234	1.873E-05	0.0000	5.064E-04	0.0001	0.000E+00	0.0000	6.054E-02	0.0102	5.087E-03	0.0009	8.037E-03	0.0013	1.558E-03	0.0003
U-235	2.069E-02	0.0035	5.206E-04	0.0001	0.000E+00	0.0000	5.966E-02	0.0100	4.811E-03	0.0008	7.598E-03	0.0013	1.719E-03	0.0003
U-238	7.456E-03	0.0013	4.520E-04	0.0001	0.000E+00	0.0000	5.735E-02	0.0096	4.830E-03	0.0008	7.632E-03	0.0013	1.477E-03	0.0002
Total	5.969E-02	0.0100	8.003E-03	0.0013	0.000E+00	0.0000	5.644E+00	0.9472	1.146E-01	0.0192	5.065E-02	0.0085	8.188E-02	0.0137

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

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.069E-01	0.0347
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.244E+00	0.7123
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.364E-01	0.0397
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.346E-01	0.0394
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.864E-01	0.1320
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.575E-02	0.0127
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.500E-02	0.0159
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.920E-02	0.0133
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.958E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	6.797E-03	0.0014	2.705E-03	0.0005	0.000E+00	0.0000	1.495E-01	0.0299	3.378E-03	0.0007	4.801E-04	0.0001	3.184E-02	0.0064
Np-237	1.255E-01	0.0251	2.451E-03	0.0005	0.000E+00	0.0000	2.711E+00	0.5419	9.145E-02	0.0183	3.009E-03	0.0006	2.894E-02	0.0058
Pu-239	7.196E-05	0.0000	4.137E-03	0.0008	0.000E+00	0.0000	2.296E-01	0.0459	1.037E-02	0.0021	3.656E-04	0.0001	4.901E-02	0.0098
Pu-240	3.517E-05	0.0000	4.042E-03	0.0008	0.000E+00	0.0000	2.243E-01	0.0448	1.013E-02	0.0020	3.573E-04	0.0001	4.789E-02	0.0096
Tc-99	2.612E-05	0.0000	6.830E-08	0.0000	0.000E+00	0.0000	7.473E-01	0.1494	8.713E-04	0.0002	2.369E-02	0.0047	1.721E-05	0.0000
U-234	5.387E-04	0.0001	1.174E-03	0.0002	0.000E+00	0.0000	6.381E-02	0.0128	1.061E-02	0.0021	1.715E-02	0.0034	3.625E-03	0.0007
U-235	1.721E-01	0.0344	1.519E-03	0.0003	0.000E+00	0.0000	6.829E-02	0.0136	1.004E-02	0.0020	1.620E-02	0.0032	5.417E-03	0.0011
U-238	3.367E-02	0.0067	1.044E-03	0.0002	0.000E+00	0.0000	5.916E-02	0.0118	1.004E-02	0.0020	1.624E-02	0.0032	3.413E-03	0.0007
Total	3.388E-01	0.0677	1.707E-02	0.0034	0.000E+00	0.0000	4.253E+00	0.8500	1.469E-01	0.0294	7.750E-02	0.0155	1.702E-01	0.0340

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

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.947E-01	0.0389
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.963E+00	0.5921
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.936E-01	0.0587
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.868E-01	0.0573
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	7.719E-01	0.1543
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.691E-02	0.0194
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.736E-01	0.0547
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	1.236E-01	0.0247
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.004E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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

Water Independent Pathways (Inhalation excludes radon)

Radio- Nuclide	Ground		Inhalation		Radon		Plant		Meat		Milk		Soil	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	2.206E-03	0.0011	8.757E-04	0.0004	0.000E+00	0.0000	4.850E-02	0.0241	1.098E-03	0.0005	1.555E-04	0.0001	1.031E-02	0.0051
Np-237	2.046E-02	0.0102	4.021E-04	0.0002	0.000E+00	0.0000	4.412E-01	0.2193	1.490E-02	0.0074	5.107E-04	0.0003	4.719E-03	0.0023
Pu-239	6.799E-05	0.0000	3.903E-03	0.0019	0.000E+00	0.0000	2.165E-01	0.1076	9.781E-03	0.0049	3.449E-04	0.0002	4.624E-02	0.0230
Pu-240	3.143E-05	0.0000	3.613E-03	0.0018	0.000E+00	0.0000	2.004E-01	0.0996	9.054E-03	0.0045	3.196E-04	0.0002	4.280E-02	0.0213
Tc-99	1.694E-05	0.0000	4.429E-08	0.0000	0.000E+00	0.0000	4.844E-01	0.2408	5.649E-04	0.0003	1.536E-02	0.0076	1.116E-05	0.0000
U-234	4.163E-03	0.0021	9.202E-04	0.0005	0.000E+00	0.0000	6.269E-02	0.0312	8.584E-03	0.0043	1.386E-02	0.0069	2.987E-03	0.0015
U-235	1.394E-01	0.0693	2.163E-03	0.0011	0.000E+00	0.0000	7.376E-02	0.0367	7.864E-03	0.0039	1.258E-02	0.0063	8.696E-03	0.0043
U-238	2.593E-02	0.0129	8.060E-04	0.0004	0.000E+00	0.0000	4.565E-02	0.0227	7.751E-03	0.0039	1.254E-02	0.0062	2.634E-03	0.0013
Total	1.923E-01	0.0956	1.268E-02	0.0063	0.000E+00	0.0000	1.573E+00	0.7820	5.959E-02	0.0296	5.567E-02	0.0277	1.184E-01	0.0588

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

Water Dependent Pathways

Radio- Nuclide	Water		Fish		Radon		Plant		Meat		Milk		All Pathways*	
	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.	mrem/yr	fract.
Am-241	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	6.315E-02	0.0314
Np-237	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	4.822E-01	0.2397
Pu-239	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.769E-01	0.1376
Pu-240	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.563E-01	0.1274
Tc-99	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	5.003E-01	0.2487
U-234	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.321E-02	0.0463
U-235	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.445E-01	0.1215
U-238	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	9.531E-02	0.0474
Total	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	0.000E+00	0.0000	2.012E+00	1.0000

*Sum of all water independent and dependent pathways.

Summary : Hematite - Root CSM

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

Parent (i)	Product (j)	Thread Fraction	DSR(j,t) At Time in Years (mrem/yr)/(pCi/g)							
			0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	2.019E-01	2.020E-01	2.021E-01	2.027E-01	2.041E-01	2.068E-01	1.943E-01	6.288E-02
Am-241	Np-237+D	1.000E+00	7.602E-07	2.371E-06	5.590E-06	1.674E-05	4.765E-05	1.452E-04	3.354E-04	2.657E-04
Am-241	U-233	1.000E+00	2.070E-14	1.215E-13	5.858E-13	5.007E-12	4.255E-11	4.935E-10	4.428E-09	1.850E-08
Am-241	Th-229+D	1.000E+00	1.979E-18	2.445E-17	2.615E-16	6.705E-15	1.683E-13	7.027E-12	3.243E-10	5.733E-09
Am-241	ΣDSR (j)		2.019E-01	2.020E-01	2.021E-01	2.027E-01	2.041E-01	2.069E-01	1.947E-01	6.315E-02
Np-237+D	Np-237+D	1.000E+00	4.993E+00	4.985E+00	4.969E+00	4.913E+00	4.757E+00	4.244E+00	2.962E+00	4.820E-01
Np-237+D	U-233	1.000E+00	1.734E-07	4.457E-07	9.858E-07	2.902E-06	8.584E-06	3.044E-05	9.296E-05	1.307E-04
Np-237+D	Th-229+D	1.000E+00	2.223E-11	1.335E-10	6.667E-10	5.868E-09	5.121E-08	6.570E-07	1.049E-05	6.409E-05
Np-237+D	ΣDSR (j)		4.993E+00	4.985E+00	4.969E+00	4.913E+00	4.757E+00	4.244E+00	2.963E+00	4.822E-01
Pu-239	Pu-239	1.000E+00	1.966E-01	1.970E-01	1.978E-01	2.006E-01	2.086E-01	2.364E-01	2.936E-01	2.769E-01
Pu-239	U-235+D	1.000E+00	2.917E-11	9.043E-11	2.146E-10	6.641E-10	2.085E-09	9.232E-09	7.996E-08	2.276E-07
Pu-239	Pa-231	1.000E+00	2.572E-15	1.603E-14	8.021E-14	7.032E-13	6.073E-12	7.367E-11	8.252E-10	8.127E-09
Pu-239	Ac-227+D	1.000E+00	2.373E-17	3.487E-16	4.012E-15	1.024E-13	2.270E-12	6.308E-11	1.293E-09	1.473E-08
Pu-239	ΣDSR (j)		1.966E-01	1.970E-01	1.978E-01	2.006E-01	2.086E-01	2.364E-01	2.936E-01	2.769E-01
Pu-240	Pu-240	4.950E-08	9.732E-09	9.751E-09	9.789E-09	9.923E-09	1.030E-08	1.161E-08	1.420E-08	1.268E-08
Pu-240	Pu-240	1.000E+00	1.966E-01	1.970E-01	1.978E-01	2.005E-01	2.081E-01	2.346E-01	2.868E-01	2.563E-01
Pu-240	U-236	1.000E+00	8.041E-10	2.498E-09	5.922E-09	1.820E-08	5.580E-08	2.159E-07	8.269E-07	2.288E-06
Pu-240	Th-232	1.000E+00	4.611E-20	2.871E-19	1.437E-18	1.263E-17	1.101E-16	1.366E-15	1.529E-14	1.492E-13
Pu-240	Ra-228+D	1.000E+00	3.867E-20	6.066E-19	6.940E-18	1.568E-16	2.570E-15	4.228E-14	5.161E-13	5.238E-12
Pu-240	Th-228+D	1.000E+00	4.688E-22	1.040E-20	1.859E-19	7.775E-18	1.995E-16	5.354E-15	1.533E-13	1.576E-12
Pu-240	ΣDSR (j)		1.966E-01	1.970E-01	1.978E-01	2.005E-01	2.081E-01	2.346E-01	2.868E-01	2.563E-01
Tc-99	Tc-99	1.000E+00	7.746E-01	7.747E-01	7.750E-01	7.760E-01	7.786E-01	7.864E-01	7.719E-01	5.003E-01
U-234	U-234	1.000E+00	6.009E-02	6.025E-02	6.057E-02	6.169E-02	6.486E-02	7.555E-02	9.468E-02	7.275E-02
U-234	Th-230	1.000E+00	1.593E-07	4.345E-07	9.845E-07	2.949E-06	8.897E-06	3.355E-05	1.259E-04	3.652E-04
U-234	Ra-226+D	1.000E+00	3.459E-09	2.559E-08	1.387E-07	1.265E-06	1.093E-05	1.292E-04	1.527E-03	1.394E-02
U-234	Pb-210+D	1.000E+00	3.243E-11	3.600E-10	3.365E-09	7.389E-08	1.527E-06	3.895E-05	5.813E-04	6.150E-03
U-234	ΣDSR (j)		6.009E-02	6.025E-02	6.057E-02	6.169E-02	6.488E-02	7.575E-02	9.691E-02	9.321E-02
U-235+D	U-235+D	1.000E+00	6.199E-02	6.221E-02	6.266E-02	6.427E-02	6.915E-02	9.194E-02	2.586E-01	1.991E-01
U-235+D	Pa-231	1.000E+00	7.293E-06	1.992E-05	4.511E-05	1.347E-04	4.026E-04	1.481E-03	5.503E-03	1.581E-02
U-235+D	Ac-227+D	1.000E+00	9.526E-08	6.566E-07	3.412E-06	2.887E-05	2.107E-04	1.582E-03	9.516E-03	2.959E-02
U-235+D	ΣDSR (j)		6.199E-02	6.223E-02	6.271E-02	6.443E-02	6.976E-02	9.500E-02	2.736E-01	2.445E-01
U-238	U-238	5.400E-05	2.924E-06	2.931E-06	2.947E-06	3.002E-06	3.156E-06	3.677E-06	4.607E-06	3.547E-06
U-238+D	U-238+D	9.999E-01	6.009E-02	6.027E-02	6.063E-02	6.189E-02	6.554E-02	7.917E-02	1.235E-01	9.508E-02
U-238+D	U-234	9.999E-01	8.521E-08	2.562E-07	6.010E-07	1.836E-06	5.608E-06	2.153E-05	8.068E-05	2.066E-04
U-238+D	Th-230	9.999E-01	1.632E-13	1.008E-12	5.040E-12	4.428E-11	3.851E-10	4.756E-09	5.271E-08	4.885E-07
U-238+D	Ra-226+D	9.999E-01	2.379E-15	3.816E-14	4.608E-13	1.253E-11	3.146E-10	1.223E-08	4.304E-07	1.287E-05
U-238+D	Pb-210+D	9.999E-01	2.027E-17	4.620E-16	9.103E-15	5.749E-13	3.478E-11	3.106E-09	1.502E-07	5.509E-06
U-238+D	ΣDSR (j)		6.009E-02	6.027E-02	6.063E-02	6.189E-02	6.555E-02	7.920E-02	1.236E-01	9.531E-02

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

Summary : Hematite - Root CSM

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

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

Nuclide (i)	t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	1.238E+02	1.238E+02	1.237E+02	1.233E+02	1.225E+02	1.208E+02	1.284E+02	3.959E+02
Np-237	5.007E+00	5.015E+00	5.031E+00	5.088E+00	5.255E+00	5.891E+00	8.439E+00	5.184E+01
Pu-239	1.272E+02	1.269E+02	1.264E+02	1.246E+02	1.198E+02	1.057E+02	8.516E+01	9.029E+01
Pu-240	1.272E+02	1.269E+02	1.264E+02	1.247E+02	1.201E+02	1.066E+02	8.717E+01	9.756E+01
Tc-99	3.227E+01	3.227E+01	3.226E+01	3.222E+01	3.211E+01	3.179E+01	3.239E+01	4.997E+01
U-234	4.161E+02	4.149E+02	4.127E+02	4.052E+02	3.853E+02	3.300E+02	2.580E+02	2.682E+02
U-235	4.033E+02	4.017E+02	3.987E+02	3.880E+02	3.584E+02	2.632E+02	9.138E+01	1.022E+02
U-238	4.160E+02	4.148E+02	4.123E+02	4.039E+02	3.814E+02	3.157E+02	2.023E+02	2.623E+02

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

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

at tmin = time of minimum single radionuclide soil guideline

and at tmax = time of maximum total dose = 0.000E+00 years

Nuclide (i)	Initial (pCi/g)	tmin (years)	DSR(i,tmin)	G(i,tmin) (pCi/g)	DSR(i,tmax)	G(i,tmax) (pCi/g)
Am-241	1.000E+00	249.7 ± 0.5	2.110E-01	1.185E+02	2.019E-01	1.238E+02
Np-237	1.000E+00	0.000E+00	4.993E+00	5.007E+00	4.993E+00	5.007E+00
Pu-239	1.000E+00	249.9 ± 0.5	2.948E-01	8.481E+01	1.966E-01	1.272E+02
Pu-240	1.000E+00	249.8 ± 0.5	2.891E-01	8.647E+01	1.966E-01	1.272E+02
Tc-99	1.000E+00	249.1 ± 0.5	7.964E-01	3.139E+01	7.746E-01	3.227E+01
U-234	1.000E+00	249.9 ± 0.5	9.805E-02	2.550E+02	6.009E-02	4.161E+02
U-235	1.000E+00	250.1 ± 0.5	2.759E-01	9.061E+01	6.199E-02	4.033E+02
U-238	1.000E+00	249.9 ± 0.5	1.259E-01	1.986E+02	6.009E-02	4.160E+02

Summary : Hematite - Root CSM

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

Nuclide (j)	Parent (i)	THF(i)	DOSE (j, t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Am-241	Am-241	1.000E+00	2.019E-01	2.020E-01	2.021E-01	2.027E-01	2.041E-01	2.068E-01	1.943E-01	6.288E-02
Np-237	Am-241	1.000E+00	7.602E-07	2.371E-06	5.590E-06	1.674E-05	4.765E-05	1.452E-04	3.354E-04	2.657E-04
Np-237	Np-237	1.000E+00	4.993E+00	4.985E+00	4.969E+00	4.913E+00	4.757E+00	4.244E+00	2.962E+00	4.820E-01
Np-237	ΣDOSE (j)		4.993E+00	4.985E+00	4.969E+00	4.913E+00	4.757E+00	4.244E+00	2.963E+00	4.823E-01
U-233	Am-241	1.000E+00	2.070E-14	1.215E-13	5.858E-13	5.007E-12	4.255E-11	4.935E-10	4.428E-09	1.850E-08
U-233	Np-237	1.000E+00	1.734E-07	4.457E-07	9.858E-07	2.902E-06	8.584E-06	3.044E-05	9.296E-05	1.307E-04
U-233	ΣDOSE (j)		1.734E-07	4.457E-07	9.858E-07	2.902E-06	8.584E-06	3.044E-05	9.296E-05	1.308E-04
Th-229	Am-241	1.000E+00	1.979E-18	2.445E-17	2.615E-16	6.705E-15	1.683E-13	7.027E-12	3.243E-10	5.733E-09
Th-229	Np-237	1.000E+00	2.223E-11	1.335E-10	6.667E-10	5.868E-09	5.121E-08	6.570E-07	1.049E-05	6.409E-05
Th-229	ΣDOSE (j)		2.223E-11	1.335E-10	6.667E-10	5.868E-09	5.121E-08	6.570E-07	1.049E-05	6.409E-05
Pu-239	Pu-239	1.000E+00	1.966E-01	1.970E-01	1.978E-01	2.006E-01	2.086E-01	2.364E-01	2.936E-01	2.769E-01
U-235	Pu-239	1.000E+00	2.917E-11	9.043E-11	2.146E-10	6.641E-10	2.085E-09	9.232E-09	7.996E-08	2.276E-07
U-235	U-235	1.000E+00	6.199E-02	6.221E-02	6.266E-02	6.427E-02	6.915E-02	9.194E-02	2.586E-01	1.991E-01
U-235	ΣDOSE (j)		6.199E-02	6.221E-02	6.266E-02	6.427E-02	6.915E-02	9.194E-02	2.586E-01	1.991E-01
Pa-231	Pu-239	1.000E+00	2.572E-15	1.603E-14	8.021E-14	7.032E-13	6.073E-12	7.367E-11	8.252E-10	8.127E-09
Pa-231	U-235	1.000E+00	7.293E-06	1.992E-05	4.511E-05	1.347E-04	4.026E-04	1.481E-03	5.503E-03	1.581E-02
Pa-231	ΣDOSE (j)		7.293E-06	1.992E-05	4.511E-05	1.347E-04	4.026E-04	1.481E-03	5.503E-03	1.581E-02
Ac-227	Pu-239	1.000E+00	2.373E-17	3.487E-16	4.012E-15	1.024E-13	2.270E-12	6.308E-11	1.293E-09	1.473E-08
Ac-227	U-235	1.000E+00	9.526E-08	6.566E-07	3.412E-06	2.887E-05	2.107E-04	1.582E-03	9.516E-03	2.959E-02
Ac-227	ΣDOSE (j)		9.526E-08	6.566E-07	3.412E-06	2.887E-05	2.107E-04	1.582E-03	9.516E-03	2.959E-02
Pu-240	Pu-240	4.950E-08	9.732E-09	9.751E-09	9.789E-09	9.923E-09	1.030E-08	1.161E-08	1.420E-08	1.268E-08
Pu-240	Pu-240	1.000E+00	1.966E-01	1.970E-01	1.978E-01	2.005E-01	2.081E-01	2.346E-01	2.868E-01	2.563E-01
Pu-240	ΣDOSE (j)		1.966E-01	1.970E-01	1.978E-01	2.005E-01	2.081E-01	2.346E-01	2.868E-01	2.563E-01
U-236	Pu-240	1.000E+00	8.041E-10	2.498E-09	5.922E-09	1.820E-08	5.580E-08	2.159E-07	8.269E-07	2.288E-06
Th-232	Pu-240	1.000E+00	4.611E-20	2.871E-19	1.437E-18	1.263E-17	1.101E-16	1.366E-15	1.529E-14	1.492E-13
Ra-228	Pu-240	1.000E+00	3.867E-20	6.066E-19	6.940E-18	1.568E-16	2.570E-15	4.228E-14	5.161E-13	5.238E-12
Th-228	Pu-240	1.000E+00	4.688E-22	1.040E-20	1.859E-19	7.775E-18	1.995E-16	5.354E-15	1.533E-13	1.576E-12
Tc-99	Tc-99	1.000E+00	7.746E-01	7.747E-01	7.750E-01	7.760E-01	7.786E-01	7.864E-01	7.719E-01	5.003E-01
U-234	U-234	1.000E+00	6.009E-02	6.025E-02	6.057E-02	6.169E-02	6.486E-02	7.555E-02	9.468E-02	7.275E-02
U-234	U-238	9.999E-01	8.521E-08	2.562E-07	6.010E-07	1.836E-06	5.608E-06	2.153E-05	8.068E-05	2.066E-04
U-234	ΣDOSE (j)		6.009E-02	6.025E-02	6.057E-02	6.169E-02	6.486E-02	7.557E-02	9.476E-02	7.295E-02
Th-230	U-234	1.000E+00	1.593E-07	4.345E-07	9.845E-07	2.949E-06	8.897E-06	3.355E-05	1.259E-04	3.652E-04
Th-230	U-238	9.999E-01	1.632E-13	1.008E-12	5.040E-12	4.428E-11	3.851E-10	4.756E-09	5.271E-08	4.885E-07
Th-230	ΣDOSE (j)		1.593E-07	4.345E-07	9.845E-07	2.949E-06	8.897E-06	3.356E-05	1.259E-04	3.657E-04

Summary : Hematite - Root CSM

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\HEMATITE - ROOT CSM.RAD

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

Nuclide (j)	Parent (i)	THF(i)	DOSE(j,t), mrem/yr							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-234	1.000E+00	3.459E-09	2.559E-08	1.387E-07	1.265E-06	1.093E-05	1.292E-04	1.527E-03	1.394E-02
Ra-226	U-238	9.999E-01	2.379E-15	3.816E-14	4.608E-13	1.253E-11	3.146E-10	1.223E-08	4.304E-07	1.287E-05
Ra-226	ΣDOSE(j)		3.459E-09	2.559E-08	1.387E-07	1.265E-06	1.093E-05	1.292E-04	1.527E-03	1.396E-02
Pb-210	U-234	1.000E+00	3.243E-11	3.600E-10	3.365E-09	7.389E-08	1.527E-06	3.895E-05	5.813E-04	6.150E-03
Pb-210	U-238	9.999E-01	2.027E-17	4.620E-16	9.103E-15	5.749E-13	3.478E-11	3.106E-09	1.502E-07	5.509E-06
Pb-210	ΣDOSE(j)		3.243E-11	3.600E-10	3.365E-09	7.390E-08	1.527E-06	3.895E-05	5.815E-04	6.156E-03
U-238	U-238	5.400E-05	2.924E-06	2.931E-06	2.947E-06	3.002E-06	3.156E-06	3.677E-06	4.607E-06	3.547E-06
U-238	U-238	9.999E-01	6.009E-02	6.027E-02	6.063E-02	6.189E-02	6.554E-02	7.917E-02	1.235E-01	9.508E-02
U-238	ΣDOSE(j)		6.009E-02	6.027E-02	6.063E-02	6.190E-02	6.555E-02	7.918E-02	1.235E-01	9.508E-02

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

Summary : Hematite - Root CSM

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\HEMATITE - ROOT CSM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g								
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03	
Am-241	Am-241	1.000E+00	1.000E+00	9.984E-01	9.952E-01	9.840E-01	9.528E-01	8.512E-01	6.166E-01	1.996E-01	
Np-237	Am-241	1.000E+00	0.000E+00	3.232E-07	9.656E-07	3.172E-06	9.123E-06	2.626E-05	5.190E-05	4.117E-05	
Np-237	Np-237	1.000E+00	1.000E+00	9.974E-01	9.922E-01	9.744E-01	9.251E-01	7.715E-01	4.593E-01	7.475E-02	
Np-237	ΣS(j):		1.000E+00	9.974E-01	9.923E-01	9.744E-01	9.252E-01	7.716E-01	4.593E-01	7.480E-02	
U-233	Am-241	1.000E+00	0.000E+00	7.072E-13	6.345E-12	6.975E-11	6.089E-10	6.085E-09	4.068E-08	1.705E-07	
U-233	Np-237	1.000E+00	0.000E+00	4.367E-06	1.306E-05	4.309E-05	1.255E-04	3.777E-04	8.557E-04	1.205E-03	
U-233	ΣS(j):		0.000E+00	4.367E-06	1.306E-05	4.309E-05	1.255E-04	3.777E-04	8.558E-04	1.205E-03	
Th-229	Am-241	1.000E+00	0.000E+00	2.227E-17	5.998E-16	2.203E-14	5.812E-13	1.984E-11	4.270E-10	7.576E-09	
Th-229	Np-237	1.000E+00	0.000E+00	2.063E-10	1.853E-09	2.044E-08	1.802E-07	1.866E-06	1.384E-05	8.472E-05	
Th-229	ΣS(j):		0.000E+00	2.063E-10	1.853E-09	2.044E-08	1.802E-07	1.866E-06	1.384E-05	8.473E-05	
Pu-239	Pu-239	1.000E+00	1.000E+00	9.999E-01	9.998E-01	9.992E-01	9.975E-01	9.917E-01	9.753E-01	9.201E-01	
U-235	Pu-239	1.000E+00	0.000E+00	9.846E-10	2.953E-09	9.826E-09	2.934E-08	9.627E-08	2.760E-07	7.866E-07	
U-235	U-235	1.000E+00	1.000E+00	9.996E-01	9.989E-01	9.963E-01	9.889E-01	9.634E-01	8.941E-01	6.885E-01	
U-235	ΣS(j):		1.000E+00	9.996E-01	9.989E-01	9.963E-01	9.889E-01	9.634E-01	8.941E-01	6.885E-01	
Pa-231	Pu-239	1.000E+00	0.000E+00	1.042E-14	9.372E-14	1.040E-12	9.329E-12	1.024E-10	8.909E-10	8.801E-09	
Pa-231	U-235	1.000E+00	0.000E+00	2.115E-05	6.343E-05	2.111E-04	6.307E-04	2.071E-03	5.953E-03	1.713E-02	
Pa-231	ΣS(j):		0.000E+00	2.115E-05	6.343E-05	2.111E-04	6.307E-04	2.071E-03	5.953E-03	1.713E-02	
Ac-227	Pu-239	1.000E+00	0.000E+00	1.097E-16	2.914E-15	1.022E-13	2.379E-12	5.757E-11	7.262E-10	8.295E-09	
Ac-227	U-235	1.000E+00	0.000E+00	3.332E-07	2.935E-06	3.032E-05	2.247E-04	1.452E-03	5.355E-03	1.667E-02	
Ac-227	ΣS(j):		0.000E+00	3.332E-07	2.935E-06	3.032E-05	2.247E-04	1.452E-03	5.355E-03	1.667E-02	
Pu-240	Pu-240	4.950E-08	4.950E-08	4.949E-08	4.948E-08	4.942E-08	4.926E-08	4.871E-08	4.717E-08	4.216E-08	
Pu-240	Pu-240	1.000E+00	1.000E+00	9.998E-01	9.995E-01	9.984E-01	9.952E-01	9.841E-01	9.530E-01	8.517E-01	
Pu-240	ΣS(j):		1.000E+00	9.998E-01	9.995E-01	9.984E-01	9.952E-01	9.841E-01	9.530E-01	8.517E-01	
U-236	Pu-240	1.000E+00	0.000E+00	2.959E-08	8.874E-08	2.952E-07	8.810E-07	2.882E-06	8.199E-06	2.271E-05	
Th-232	Pu-240	1.000E+00	0.000E+00	7.301E-19	6.568E-18	7.289E-17	6.536E-16	7.169E-15	6.219E-14	6.088E-13	
Ra-228	Pu-240	1.000E+00	0.000E+00	2.847E-20	7.252E-19	2.223E-17	3.897E-16	6.086E-15	5.893E-14	5.996E-13	
Th-228	Pu-240	1.000E+00	0.000E+00	2.417E-21	1.634E-19	1.164E-17	3.125E-16	5.736E-15	5.785E-14	5.965E-13	
Tc-99	Tc-99	1.000E+00	1.000E+00	9.994E-01	9.981E-01	9.938E-01	9.816E-01	9.400E-01	8.305E-01	5.385E-01	
U-234	U-234	1.000E+00	1.000E+00	9.996E-01	9.989E-01	9.962E-01	9.888E-01	9.631E-01	8.933E-01	6.866E-01	
U-234	U-238	9.999E-01	0.000E+00	2.834E-06	8.495E-06	2.824E-05	8.409E-05	2.731E-04	7.600E-04	1.949E-03	
U-234	ΣS(j):		1.000E+00	9.996E-01	9.989E-01	9.963E-01	9.889E-01	9.634E-01	8.941E-01	6.885E-01	
Th-230	U-234	1.000E+00	0.000E+00	9.000E-06	2.699E-05	8.984E-05	2.684E-04	8.822E-04	2.543E-03	7.389E-03	
Th-230	U-238	9.999E-01	0.000E+00	1.276E-11	1.147E-10	1.273E-09	1.139E-08	1.243E-07	1.063E-06	9.878E-06	
Th-230	ΣS(j):		0.000E+00	9.000E-06	2.699E-05	8.984E-05	2.684E-04	8.823E-04	2.544E-03	7.399E-03	

Summary : Hematite - Root CSM

File : C:\RESRAD_FAMILY\RESRAD\USERFILES\HEMATITE - ROOT CSM.RAD

Individual Nuclide Soil Concentration
Parent Nuclide and Branch Fraction Indicated

Nuclide (j)	Parent (i)	THF(i)	S(j,t), pCi/g							
			t= 0.000E+00	1.000E+00	3.000E+00	1.000E+01	3.000E+01	1.000E+02	3.000E+02	1.000E+03
Ra-226	U-234	1.000E+00	0.000E+00	1.949E-09	1.753E-08	1.944E-07	1.740E-06	1.896E-05	1.613E-04	1.477E-03
Ra-226	U-238	9.999E-01	0.000E+00	1.842E-15	4.970E-14	1.837E-12	4.930E-11	1.787E-09	4.541E-08	1.362E-06
Ra-226	ΣS(j):		0.000E+00	1.949E-09	1.753E-08	1.944E-07	1.740E-06	1.896E-05	1.614E-04	1.479E-03
Pb-210	U-234	1.000E+00	0.000E+00	2.004E-11	5.326E-10	1.868E-08	4.356E-07	1.054E-05	1.310E-04	1.392E-03
Pb-210	U-238	9.999E-01	0.000E+00	1.423E-17	1.138E-15	1.344E-13	9.652E-12	8.332E-10	3.375E-08	1.246E-06
Pb-210	ΣS(j):		0.000E+00	2.004E-11	5.326E-10	1.868E-08	4.356E-07	1.054E-05	1.310E-04	1.393E-03
U-238	U-238	5.400E-05	5.400E-05	5.398E-05	5.394E-05	5.380E-05	5.340E-05	5.202E-05	4.828E-05	3.718E-05
U-238	U-238	9.999E-01	9.999E-01	9.996E-01	9.988E-01	9.962E-01	9.888E-01	9.633E-01	8.940E-01	6.885E-01
U-238	ΣS(j):		1.000E+00	9.996E-01	9.989E-01	9.963E-01	9.889E-01	9.634E-01	8.941E-01	6.885E-01

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

RESRAD.EXE execution time = 3.05 seconds