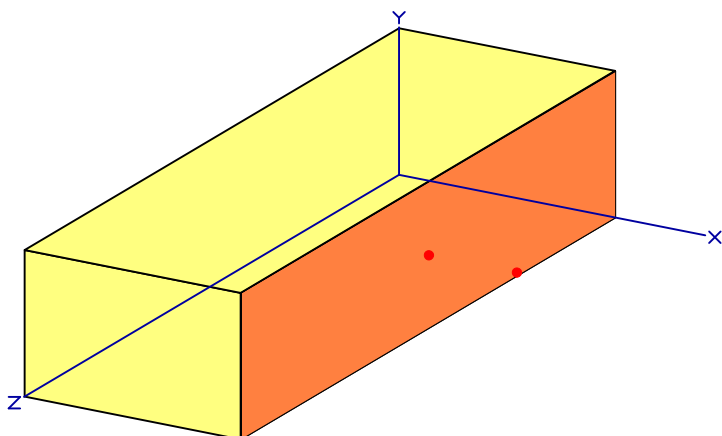


**MicroShield v5.05 (5.05-00473)**  
**American Ecology**

Page : 1  
 DOS File: MKMGON.MS5  
 Run Date: February 2, 2007  
 Run Time: 12:44:52 PM  
 Duration: 00:00:29

File Ref: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 By: \_\_\_\_\_  
 Checked: \_\_\_\_\_

**Case Title: Kuwait Truck Survey**  
**Description: U-238-124, U-235-4, U-234-30, decay 2 yr**  
**Geometry: 13 - Rectangular Volume**



**Source Dimensions**

Length	243.84 cm	8 ft
Width	731.52 cm	24 ft
Height	152.4 cm	5 ft 0.0 in

**Dose Points**

	<u>X</u>	<u>Y</u>	<u>Z</u>
# 1	245.364 cm	76.2 cm	365.76 cm
	8 ft 0.6 in	2 ft 6.0 in	12 ft
# 2	3.44e+02 cm	76.2 cm	365.76 cm
	11 ft 3.6 in	2 ft 6.0 in	12 ft

**Shields**

<u>Shield Name</u>	<u>Dimension</u>	<u>Material</u>	<u>Density</u>
Source	960.0 ft <sup>3</sup>	Concrete	1.5
Shield 1	.021 ft	Aluminum	2.7
Air Gap		Air	0.00122

**Source Input**

**Grouping Method : Standard Indices**

**Number of Groups : 25**

**Lower Energy Cutoff : 0.015**

**Photons < 0.015 : Excluded**

**Library : Grove**

<u>Nuclide</u>	<u>curies</u>	<u>becquerels</u>	<u>uCi/cm<sup>3</sup></u>	<u>Bq/cm<sup>3</sup></u>
Ac-227	2.6780e-010	9.9087e+000	9.8515e-012	3.6450e-007
Bi-210	1.2331e-013	4.5627e-003	4.5363e-015	1.6784e-010
Bi-211	2.3781e-010	8.7988e+000	8.7480e-012	3.2368e-007
Bi-214	6.2615e-012	2.3168e-001	2.3034e-013	8.5225e-009
Fr-223	3.6955e-012	1.3673e-001	1.3594e-013	5.0299e-009
Pa-231	8.6093e-009	3.1854e+002	3.1670e-010	1.1718e-005
Pa-234	8.0900e-006	2.9933e+005	2.9760e-007	1.1011e-002
Pa-234m	5.0563e-003	1.8708e+008	1.8600e-004	6.8820e+000
Pb-210	1.2702e-013	4.6999e-003	4.6727e-015	1.7289e-010
Pb-211	2.3781e-010	8.7989e+000	8.7480e-012	3.2368e-007
Pb-214	6.2619e-012	2.3169e-001	2.3035e-013	8.5229e-009
Po-210	6.2310e-014	2.3055e-003	2.2921e-015	8.4809e-011
Po-211	6.4921e-013	2.4021e-002	2.3882e-014	8.8363e-010
Po-214	6.2602e-012	2.3163e-001	2.3029e-013	8.5207e-009
Po-215	2.3783e-010	8.7998e+000	8.7490e-012	3.2371e-007
Po-218	6.2636e-012	2.3175e-001	2.3041e-013	8.5253e-009
Ra-223	2.3783e-010	8.7998e+000	8.7490e-012	3.2371e-007
Ra-226	6.3589e-012	2.3528e-001	2.3392e-013	8.6550e-009
Rn-219	2.3783e-010	8.7998e+000	8.7490e-012	3.2371e-007
Rn-222	6.2636e-012	2.3175e-001	2.3041e-013	8.5253e-009
Th-227	2.4544e-010	9.0814e+000	9.0289e-012	3.3407e-007
Th-230	1.4683e-008	5.4326e+002	5.4012e-010	1.9984e-005

Page : 2  
 DOS File: MKMGON.MS5  
 Run Date: February 2, 2007  
 Run Time: 12:44:52 PM  
 Duration: 00:00:29

<u>Nuclide</u>	<u>curies</u>	<u>becquerels</u>	<u>µCi/cm<sup>3</sup></u>	<u>Bq/cm<sup>3</sup></u>
Th-231	2.0388e-004	7.5436e+006	7.5000e-006	2.7750e-001
Th-234	5.0563e-003	1.8708e+008	1.8600e-004	6.8820e+000
Tl-207	2.3715e-010	8.7747e+000	8.7240e-012	3.2279e-007
U-234	8.1555e-004	3.0175e+007	3.0001e-005	1.1100e+000
U-235	2.0388e-004	7.5436e+006	7.5000e-006	2.7750e-001
U-238	5.0563e-003	1.8708e+008	1.8600e-004	6.8820e+000

**Buildup**  
**The material reference is : Source**

**Integration Parameters**

X Direction	20
Y Direction	20
Z Direction	20

**Results - Dose Point # 1 - (8.05,2.5,12) ft**

<u>Energy</u>	<u>Activity</u>	<u>Fluence Rate</u>	<u>Fluence Rate</u>	<u>Exposure Rate</u>	<u>Exposure Rate</u>
<u>MeV</u>	<u>photons/sec</u>	<u>MeV/cm<sup>2</sup>/sec</u>	<u>MeV/cm<sup>2</sup>/sec</u>	<u>mR/hr</u>	<u>mR/hr</u>
		<u>No Buildup</u>	<u>With Buildup</u>	<u>No Buildup</u>	<u>With Buildup</u>
0.015	1.419e+04	2.480e-29	3.430e-29	2.128e-30	2.942e-30
0.02	1.134e+00	5.516e-20	6.796e-20	1.911e-21	2.354e-21
0.03	1.105e+06	5.676e-07	8.856e-07	5.626e-09	8.777e-09
0.04	3.669e+02	1.437e-08	2.937e-08	6.354e-11	1.299e-10
0.05	3.561e+04	8.729e-06	2.312e-05	2.325e-08	6.158e-08
0.06	7.359e+06	4.762e-03	1.541e-02	9.458e-06	3.060e-05
0.08	1.151e+06	2.025e-03	8.238e-03	3.204e-06	1.304e-05
0.1	1.228e+07	3.697e-02	1.660e-01	5.656e-05	2.540e-04
0.15	1.269e+06	8.117e-03	3.742e-02	1.337e-05	6.162e-05
0.2	4.718e+06	4.837e-02	2.113e-01	8.537e-05	3.729e-04
0.3	2.177e+04	4.247e-04	1.633e-03	8.057e-07	3.097e-06
0.4	1.838e+04	5.657e-04	1.953e-03	1.102e-06	3.805e-06
0.5	2.730e+04	1.198e-03	3.799e-03	2.352e-06	7.457e-06
0.6	1.115e+05	6.555e-03	1.933e-02	1.279e-05	3.772e-05
0.8	6.211e+05	5.806e-02	1.537e-01	1.104e-04	2.924e-04
1.0	1.986e+06	2.670e-01	6.540e-01	4.922e-04	1.206e-03
1.5	4.189e+04	1.097e-02	2.356e-02	1.845e-05	3.963e-05
2.0	5.404e+03	2.263e-03	4.501e-03	3.499e-06	6.961e-06
TOTALS:	3.077e+07	4.473e-01	1.301e+00	8.096e-04	2.329e-03

**Results - Dose Point # 2 - (11.301,2.5,12) ft**

<u>Energy</u>	<u>Activity</u>	<u>Fluence Rate</u>	<u>Fluence Rate</u>	<u>Exposure Rate</u>	<u>Exposure Rate</u>
<u>MeV</u>	<u>photons/sec</u>	<u>MeV/cm<sup>2</sup>/sec</u>	<u>MeV/cm<sup>2</sup>/sec</u>	<u>mR/hr</u>	<u>mR/hr</u>
		<u>No Buildup</u>	<u>With Buildup</u>	<u>No Buildup</u>	<u>With Buildup</u>
0.015	1.419e+04	1.862e-17	2.048e-17	1.597e-18	1.757e-18
0.02	1.134e+00	3.046e-15	3.611e-15	1.055e-16	1.251e-16
0.03	1.105e+06	1.002e-05	1.424e-05	9.926e-08	1.411e-07
0.04	3.669e+02	3.486e-08	6.033e-08	1.542e-10	2.668e-10
0.05	3.561e+04	1.020e-05	2.162e-05	2.717e-08	5.759e-08
0.06	7.359e+06	4.062e-03	1.046e-02	8.068e-06	2.078e-05
0.08	1.151e+06	1.356e-03	4.326e-03	2.145e-06	6.846e-06

Page : 3  
 DOS File: MKMGON.MS5  
 Run Date: February 2, 2007  
 Run Time: 12:44:52 PM  
 Duration: 00:00:29

<u>Energy</u>	<u>Activity</u>	<u>Fluence Rate</u>	<u>Fluence Rate</u>	<u>Exposure Rate</u>	<u>Exposure Rate</u>
<u>MeV</u>	<u>photons/sec</u>	<u>MeV/cm<sup>2</sup>/sec</u>	<u>MeV/cm<sup>2</sup>/sec</u>	<u>mR/hr</u>	<u>mR/hr</u>
		<u>No Buildup</u>	<u>With Buildup</u>	<u>No Buildup</u>	<u>With Buildup</u>
0.1	1.228e+07	2.263e-02	8.039e-02	3.461e-05	1.230e-04
0.15	1.269e+06	4.558e-03	1.704e-02	7.505e-06	2.807e-05
0.2	4.718e+06	2.610e-02	9.430e-02	4.606e-05	1.664e-04
0.3	2.177e+04	2.188e-04	7.142e-04	4.150e-07	1.355e-06
0.4	1.838e+04	2.828e-04	8.435e-04	5.510e-07	1.644e-06
0.5	2.730e+04	5.859e-04	1.626e-03	1.150e-06	3.191e-06
0.6	1.115e+05	3.150e-03	8.204e-03	6.148e-06	1.601e-05
0.8	6.211e+05	2.715e-02	6.442e-02	5.165e-05	1.225e-04
1.0	1.986e+06	1.223e-01	2.711e-01	2.255e-04	4.997e-04
1.5	4.189e+04	4.841e-03	9.554e-03	8.145e-06	1.607e-05
2.0	5.404e+03	9.739e-04	1.796e-03	1.506e-06	2.777e-06
TOTALS:	3.077e+07	2.182e-01	5.648e-01	3.935e-04	1.009e-03