

TABLE 2
Lifetime IUR (f/cc)⁻¹ and Less-than-Lifetime IUR (f/cc)⁻¹ Values
for Various Continuous Exposure Scenarios

| <u>Age at First Exposure (years)</u> | <u>Duration of Exposure (years)</u> | | | | | | | | | |
|--------------------------------------|-------------------------------------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | <u>1</u> | <u>5</u> | <u>6</u> | <u>10</u> | <u>20</u> | <u>24</u> | <u>25</u> | <u>30</u> | <u>40</u> | <u>LT</u> |
| 0 | 0.010 | 0.046 | 0.055 | 0.084 | 0.14 | 0.147 | 0.15 | 0.17 | 0.19 | 0.23* |
| 5 | 0.0085 | 0.039 | 0.046 | 0.070 | 0.11 | 0.13 | 0.13 | 0.14 | 0.16 | - |
| 10 | 0.0068 | 0.031 | 0.038 | 0.058 | 0.094 | 0.098 | 0.10 | 0.11 | 0.13 | - |
| 20 | 0.0046 | 0.021 | 0.027 | 0.038 | 0.063 | 0.065 | 0.066 | 0.075 | 0.083 | - |
| 30 | 0.0031 | 0.014 | 0.018 | 0.025 | 0.042 | 0.043 | 0.045 | 0.048 | 0.052 | - |

* LT = continuous lifetime exposure beginning at birth and lasting until death of the individual, 24 hrs/day, 365 days/yr

TABLE 3
IURs for Example Exposure Scenarios

| <u>Exposure Scenario</u> | <u>Age at First Exposure (years)</u> | <u>Exposure Duration (years)</u> | <u>IUR (f/cc)⁻¹</u> |
|--------------------------|--------------------------------------|----------------------------------|--------------------------------|
| Continuous Lifetime | 0 | lifetime | 0.23 (IRIS) |
| Baseline Residential | 0 | 30 | 0.17 |
| Gardening | 20 | 30 | 0.075 |
| Running/Walking | 20 | 24 | 0.068 |
| Child playing in soil | 1 | 5 | 0.045 |

Example 3

Combined Residential Ambient Air Exposure and Gardening Exposure - Adult

In this scenario, an adult receptor is exposed due to disturbance of asbestos-contaminated soil while gardening and to asbestos in ambient air during quiescent activities. Under a residential RME scenario, the period of exposure is assumed to be 30 years, starting at age 20. The gardening scenario is assumed to be 10 hours per day, 50 days per year. Similarly, RME exposure to asbestos in ambient air is assumed to occur at all times that gardening is not occurring (14 hours per day for 50 days per year and 24 hours per day for 300 days per year). The asbestos concentration in the breathing zone while gardening during ABS was 0.02 f/cc, which is used as the EPC_G . The ambient air concentration measured in the community by stationary air monitors was 0.0007 f/cc, which is used as the EPC_{Amb} . The IUR_{LTL} for this scenario can be read directly from Table 2. ELCR is calculated as the sum of risk from exposure to asbestos from gardening and risk from ambient exposure to asbestos.

$$TWF_G = (10/24 \text{ hours/day}) \times (50/365 \text{ days/year}) = 0.057$$

$$TWF_{Amb} = [(14/24 \text{ hours/day}) \times (50/365 \text{ days/year})] + (24/24 \text{ hours/day}) \times (300/365 \text{ days/year}) = 0.90$$

(14 hours/day while gardening + 24 hours/day other days while at home)

$$IUR_{LTL} = 0.075 \text{ (f/cc)}^{-1}$$

(Table 3: 30-year exposure, starting at age 20)

$$\begin{aligned} ELCR &= [(EPC_G \cdot TWF_G) + (EPC_{Amb} \cdot TWF_{Amb})] \cdot IUR_{LTL} \\ &= [(0.02 \text{ f/cc} \cdot 0.057) + (0.0007 \text{ f/cc} \cdot 0.90)] \cdot 0.075 \text{ (f/cc)}^{-1} \\ &= 8.5 \times 10^{-5} + 4.7 \times 10^{-5} \\ &= 1.3 \times 10^{-4} \end{aligned}$$