MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
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INTEROFFICE COMMUNICATION
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TO: File for Dieldrin (CAS #60-57-1)

FROM: Robert Sills, AQD Toxics Unit Supervisor

SUBJECT: Screening levels for Dieldrin

DATE: August 13, 2015

The screening levels for dieldrin were established on 10/15/92. They are as follows:
IRSL = 0.0002 µg/m^3, annual averaging time;
SRSL = 0.002 µg/m^3, annual averaging time.

The basis for these SLs is the EPA (1992; IRIS) assessment, which reported an inhalation unit risk factor of 4.6E-3 (ug/m^3)$^{-1}$. EPA (1992) derived this unit risk from the oral carcinogenicity data and quantitative risk assessment (oral slope factor = 1.6E+1 per (mg/kg-d)). The final oral slope factor was the geometric mean of 13 slope factors calculated from liver carcinoma data in both sexes and several strains of mice. The conversion of the oral slope factor to the inhalation unit risk estimate by EPA (1992) was apparently calculated assuming a 70 kg human and a 20 m^3/d ventilation rate.

EPA (1992) concluded that dieldrin is classified as, "B2; probable human carcinogen" based on oral carcinogenicity in seven strains of mice. EPA (1992) provided an inhalation unit risk = 4.6E-3 per µg/m^3. Based on this unit risk estimate (URE), the IRSL and SRSL are derived as follows:

$$IRSL = \frac{1E\text{-}6}{4.6E\text{-}3\ (µg/m^3)^{-1}} = 0.0002\ µg/m^3\ (annual\ AT)$$

$$SRSL = \frac{1E\text{-}5}{4.6E\text{-}3\ (µg/m^3)^{-1}} = 0.002\ µg/m^3\ (annual\ AT)$$

<u>References</u>

EPA. 1992. IRIS database. Chemical entry for dieldrin. Carcinogenicity assessment. Last revised 1/1/91. Still current as of 8/13/15.

RS:lh