

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

January 20, 2016

TO: File for Benzo(g,h,i)perylene (CAS No. 191-24-2)

FROM: Mike Depa, Toxics Unit, Air Quality Division

SUBJECT: Initial Threshold Screening Level

The Initial Threshold Screening Level (ITSL) for benzo(g,h,i)perylene is 13 $\mu\text{g}/\text{m}^3$, with annual averaging time.

Previously, the averaging time (AT) assigned to benzo(g,h,i)perylene was 24 hours, as per the default methodology (see attached memo from Robert Sills dated July 19, 1993). The current file review concludes that the AT may appropriately be set at annual, based on the nature and duration of the key study and the ITSL value derivation, as allowed under Rule 229(2)(b). Therefore, the AT is set to annual.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

July 19, 1993

TO: File for benzo(g,h,i)perylene (CAS No. 191-24-2)

FROM: Robert Sills, Surface Water Quality Division

SUBJECT: Screening Level Derivation

A review of the available literature revealed no occupational exposure levels, EPA RfD or RfC, or acute, subchronic or chronic data suitable for ITSL derivation. NTIS, CAS online, and Toxline databases were searched through June 1993. Review documents, the most recent being EPA (1991), and ATSDR (1990) were also reviewed. EPA (1992) classified benzo(g,h,i)perylene in carcinogenicity group 'D's (not classifiable). Due to the lack of data, the MDNR Environmental Response Division (1993) developed interim cleanup values for this and other PAHs based on the NOAEL for naphthalene, which is the most toxic of the noncarcinogenic PAHs, with an additional 10-fold uncertainty factor to account for the inadequate database. This results in an oral RfD of 3.6 µg/kg-day. If an ITSL were derived via this approach it would be as follows:

estimated ITSL = oral RfD x 70k//20m³ = 3.6 µg/kg-day x 70 kg/20m³ =
12.6 µg/m³, averaging time is 24 hours.

Although this approach may not be suitable for ITSL derivation, the estimate serves as a useful comparison to the P.A.I. of 0.005 µg/m³ (as total PAHs) for the permit of current interest (Marquette County).

REFERENCES

ATSDR. 1990. Toxicological Profile for Polycyclic Aromatic Hydrocarbons. TP-90-20.

MDNR. 1993. Justification: Type B Cleanup Criteria for Acenaphthylene, Benzo(g,h,i)perylene and Phenanthrene. Environmental Response Division. Interoffice Communication from Jeff Crum.

EPA. 1992. Integrated Risk Information System (IRIS database). Chemical file for benzo(g,h,i)perylene. Last revised 12/1/90.

EPA. 1991. Drinking Water Criteria Document for Polycyclic Aromatic Hydrocarbons (PAHS). ECAO-CIN-D010. PB92-173459.

RS:ma