1 Equilibrium Corrections for Freely Dissolved PCB Congener Calculations

Equilibrium corrections were performed as described in the surface water quality assurance project plan (QAPP) (Windward 2017). Calculations are presented in Attachment G-1.

Briefly, measured fractions of performance reference compounds (PRCs) lost after deployment were used to calculate a regression line between the model-estimated partitioning constant (K_D) and the octanol-water partitioning constant (K_OW) (Apell and Gschwend 2014). This K_OW/ K_D fit was used to calculate the fractional equilibration for each polychlorinated biphenyl (PCB) congener using a PRC correction calculator accessed via a graphical user interface, as described by EPA et al. (2017).

Appendix C of the QAPP (Windward 2017) presents the physical and chemical properties that were used to correct for nonequilibrium conditions. PRC calculator default values were used for the properties of the PCB congeners. If a loss greater than 90% was observed for a PRC, then analytes with a K_OW lower than or equal to this PRC were assumed to be at equilibrium with surface water in that sampler (Gschwend et al. 2014).

2 References


