

SELECTING PERFORMANCE REFERENCE COMPOUNDS (PRCS) FOR LOW DENSITY POLYETHYLENE PASSIVE SAMPLERS MM Perron, U.S. EPA, OCSPP, Washington, DC, USA (perron.monique@epa.gov); RM Burgess, LA Fernandez, MG Cantwell, U.S. EPA, ORD, Narragansett, RI, USA

Use of equilibrium passive samplers for performing aquatic environmental monitoring at contaminated sites is becoming more common. However, a current challenge in passive sampling is determining when equilibrium is achieved between the sampler, target contaminants, and environmental phases. A common approach is the use of surrogate contaminants, called performance reference compounds (PRCs), to indicate the degree of equilibrium achieved for target contaminants during the deployment; however, there remain several research and logistical issues related to their use. One of these logistical issues is the cost associated with purchasing PRCs. In an effort to address PRC expense, this investigation (1) compared the performance of inexpensive PRCs and more expensive PRCs to estimate dissolved PCB concentrations in deployments at freshwater and marine sites, and (2) evaluated the use of less PRC relative to conventional quantities for estimating dissolved PAH and PCB concentrations. The findings of this investigation indicate the use of inexpensive PRCs in the place of expensive PRCs results in similar estimates of dissolved PCB concentrations. Further, use of smaller quantities of PRCs resulted in estimates of dissolved PAH and PCB concentrations similar to concentrations based on conventional PRC quantities. Results of this investigation provide evidence that using inexpensive and smaller quantities of PRCs can be successfully performed to yield substantial cost savings without sacrificing scientific accuracy.