BIOAVAILABILITY ASSESSMENT OF A CONTAMINATED FIELD SEDIMENT FROM PATRICK BAYOU, TEXAS: TIE AND EQUILIBRIUM PARTITIONING. M.M. Perron (mperron@post.harvard.edu), J.P. Shine, Harvard School of Public Health, Boston, MA 02115; R.M. Burgess, K.T. Ho, M.C. Pelletier, M.G. Cantwell, U.S. EPA AED, Narragansett, RI.

Contaminated sediments are commonly found in urbanized harbors. Remediation is often necessary and diagnosing the cause of sediment toxicity becomes imperative. In the present study, sediments from Patrick Bayou, Texas were subjected to initial toxicity testing. All sediments were found to be toxic to the amphipod, *Ampelisca abdita*, while sites PB4A, PB6A and PB9 were the only sites found to be toxic to the mysid, *Americamysis bahia*. Due to its toxicity to both test organisms, site PB6A was chosen for a marine whole sediment Phase I toxicity identification evaluation (TIE). Based on the TIE results, toxicity to amphipods was found to be caused primarily due to nonionic organic contaminants (NOCs), rather than cationic metals or ammonia. Causes of mysid toxicity were less clear. An assessment of metal bioavailability using equilibrium partitioning (EqP) approaches supported the results of the TIE that cationic metals were not responsible for observed sediment toxicity in PB6A. Toxic units (TU) calculated on measured concentrations of PAHs and PCBs in the sediment yielded a total TU of 1.25, indicating these contaminants are contributing to the observed sediment toxicity. Using a combination of TIE and EqP assessment tools, this investigation found NOCs are the likely class of contaminants causing acute toxicity to amphipods exposed to Patrick Bayou sediment. The cause of mysid toxicity was not definitively determined, but unmeasured NOCs are suspected.