To: Robert Law[rlaw@demaximis.com]
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From: LaPoma, Jennifer
Sent: Wed 2/17/2016 5:23:50 PM
Subject: BERA comment follow up - Reference Test Acceptability Threshold

Rob,

Please see below for a follow up to the draft BERA comment discussion and CPG's request for clarification as to why acceptability criteria for Chironomus is more stringent than ASTM acceptability criteria for negative controls (SQT attachment):

The laboratory bioassay survival threshold for identifying reference stations in the Sediment Quality Triad (SQT) analysis of freshwater sediments (i.e., >=75 percent) is different than the ASTM standards (E1706-05) for acceptable control survival in the 10-day toxicity sediment test using the midge Chironomus dilutus and amphipod Hyallela azteca (>= 70 and >= 80 percent, respectively). Although the reference station threshold identified in the USEPA SQT methodology is comparable to the ASTM acceptability criteria for negative controls (and indeed is bracketed by the criteria for the two freshwater species used in the 17-mile SQT study), reference and negative control samples serve distinctly different purposes in a contaminated sediment assessment study and it is not necessary that they be harmonized. The "[negative] control sediment provides a measure of laboratory test acceptability, evidence of test organism health, and a basis for interpreting data obtained from the test sediments – USEPA, 2000" and failure to meet this performance measure is grounds for redoing the toxicity tests. The reference survival threshold is one of several criteria that are used to identify sampling locations that have been unduly influenced by anthropogenic stressors (USEPA, 1998; Weisberg et al., 1997) such as contaminant point sources. In concert, the set of reference acceptability criteria are used to identify the subset of available reference data that best approximate the "reference condition" and identify potential deviations from this state that may be attributed to site-related chemical contamination.

USEPA, 1998. Sediment Quality of the NY/NJ Harbor System, Final Report; EPA/902-R-98-001, March. 126pp.

USEPA, 2000. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates, Second Edition; Office of Research and Development and Office of Water; EPA/600/R-99/064, March.

Weisberg, S.B., D.M. Dauer, L.C. Schaffner, R.J. Diaz and J.B. Frithsen, 1997. An estuarine Benthic Index of Biotic Integrity (B-IBI) for Chesapeake Bay; *Estuaries* 20(10):149-158.

Thanks,

Jennifer LaPoma