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MOLYBDENUM ACCUMULATION IN MARINE SEDIMENTS AS AN INDICATOR OF HYPOXIC WATER CONDITIONS. Warren S. Boothman (boothman.warren@epa.gov) and L Coiro, U.S. Environmental Protection Agency, Narragansett, RI, USA.

Direct monitoring of hypoxic water column conditions over large spatial and temporal extents is difficult due to the substantial logistical and financial investment required. Recent studies have indicated that concentrations of molybdenum (Mo) in marine sediments may serve as a useful surrogate for direct measurement of hypoxic and anoxic conditions in overlying waters. Analyses of field samples show a strong relationship between accumulation of Mo and the period of time dissolved oxygen (DO) concentrations in near-bottom waters are hypoxic (below 3 mg/L). In laboratory experiments, marine sediments were exposed to seawater maintained at DO concentrations between 0.7 and 3.5 mg/L, as well as a control (saturated), and sampled biweekly for 12 weeks. Molybdenum was found to accumulate in the top 1 cm of sediment in treatments with reduced DO concentrations, and was linearly related to the time of exposure. Rates of accumulation were statistically significant for treatments with $DO \leq 2.8$ mg/L and not statistically different from each other. The mean rate of accumulation is similar to the highest rates of accumulation determined in anoxic marine basins worldwide. When compared with accumulation rates in field locations, the rates may be used to determine the frequency with which waters overlying sediments have been hypoxic, and may be used as a surrogate measure of long-term hypoxic exposure.

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No preference for platform or poster, willing to present in either format.
I do not wish to compete for the student paper, poster, and travel awards.