Poster Number

24

Topic	Effect assessment
Title	**A Weight-of-Evidence Approach to Investigate the Fate and Effect Of Metals**
Poster submitter	Dr Carrie RICKWOOD
Organization	Natural Resources Canada, Canada
Authors	**C.J. RICKWOOD, P.H.M HUNTSMAN-MAPILA**

Keywords: Metals, bioavailability, fate, toxicity, aquatic, sediments

Summary: Standard laboratory toxicity tests are often conducted in isolation of techniques that can quantify or help to understand exposure. At CanmetMINING our focus has been to incorporate multiple techniques to help gain a better understanding of metal fate and effects in sediments. The use of mini-peepers and DGTs has been employed alongside toxicity tests using the benthic invertebrate *Chironomus dilutus* and the freshwater fish *Pimephales promelas*. This allowed a comparative assessment of both pore-water and overlying water metal concentrations with toxicity data and tissue concentrations in the organisms tested. In addition, techniques to understand the biological and physical influences affecting metal fate in sediments were also incorporated. For example, sequential extractions to determine the operational speciation of metals, microbiology to understand the drivers behind metal releases from the sediments and mineralogy to assess the properties of the different phases in which the metals reside. The use of multiple techniques has improved our understanding of metal fate and effects within sediments.