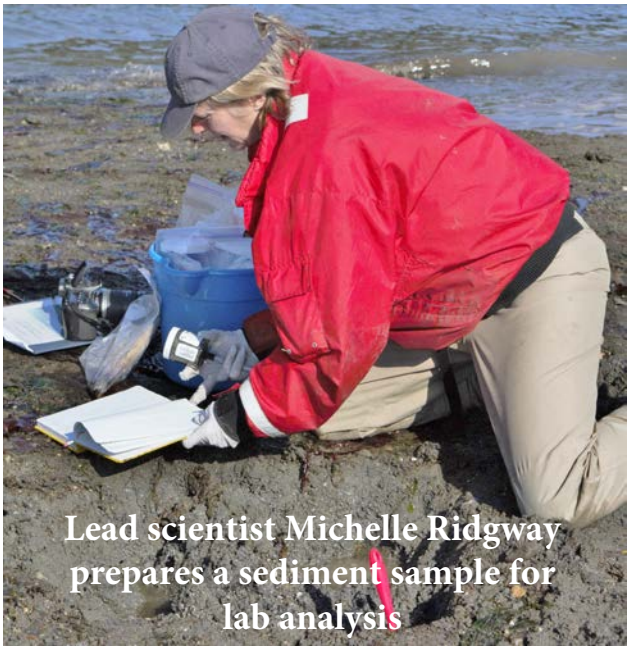

Lead scientist Michelle Ridgway prepares a sediment sample for lab analysis

Toxic Metals Contaminate Hawk Inlet

A 2015 field reconnaissance study conducted by Friends of Admiralty Island indicates that metals in Hawk Inlet sediment are significantly higher than the pre-mining baseline in the inlet and in Piledriver Cove, suggesting it is a result of mining activities. Hawk Inlet shellfish have high levels of heavy metals compared to elsewhere in Alaska and compared to historic levels in the inlet. The pattern of metals suggests considerable bioaccumulation of arsenic, copper, lead, nickel and zinc in several deeper dwelling edible and key food web invertebrates. This corroborates data observed in the mine's annual polychaete (worm) metal analysis, but the latter patterns are less clear because only shallow dwelling, filter-feeding mussels were sampled.

Bear, deer and a harbor seal liver from near the mine contained slightly to extremely elevated levels of heavy metals – suggesting that there may be multiple inputs for metals in the Hawk Inlet watershed and marine waters, including mine wastewater, fugitive mining dust (air or water borne), spilled ore and natural background.

Tributyltin, the highly toxic biocide compound called TBT, was detected in sediments below the ore loading dock at biologically significant levels (19 ppb). TBT has gender-bending, endocrine disrupting and toxic effects to molluscs at less than 1 ppb in seawater. It accumulates in the food chain, clams, prawns, salmon, bottom feeders, marine mammals and birds. TBT and its breakdown compounds magnify impacts of other contaminants and stressors in the marine environment where they occur.