

**Arctic Mining: Environmental issues,  
mitigation and pollution control for  
marine and coastal mining-  
Workshop March 21, 22, 23, 2023**



<b>Title:</b> Industry process chemicals and discharge of wastewater to the arctic environment
<b>Speaker:</b> Kim Gustavson, Senior Scientist Aarhus University
<b>Biography:</b> <i>Kim Gustavson has more than 25 years of experience with project management, research and consultancy assignments for private companies and environment authorities. He has key expertise within fate and effect of metal, oil components, pesticides, persistent organic pollutants in aquatic and terrestrial ecosystems, biological and chemical monitoring.</i>
<b>Abstract / What is the Purpose of your Talk?</b>  Environmental concerns related to use of chemicals in mining projects during processing and enrichment of metals or minerals are to ensure these are degradable, not toxic or can not be bioaccumulated. In a Greenland context, discharges of processed water from mining projects will in many cases result in discharges to the marine environment. The marine environment in the Arctic regions is characterized by low water temperatures and low concentrations of nutrient salts. Both conditions that will limit or prolong the degradation of chemicals and other substances. In addition, the organisms and food chains are characterized by slow growth and a high content of lipids, which increases the risk of bioaccumulation especially of lipophilic chemicals. A central question is how regulation can aid to ensure that the use of processing chemicals will not result in negative effects and long-term burden on the arctic marine environment and organisms. Is it possible to apply the same classification and regulation to chemicals in arctic mining projects as are being used under the OSPAR in relation to offshore oil and gas extraction? Can data from standard tests for biodegradability, bioaccumulation and toxicity be applied? What uncertainties will there be in using data from standard tests for regulation under arctic conditions?