

**ENVIRONMENTAL ASSESSMENT AND HUMAN HEALTH IN A HIGHLY METAL
POLLUTED COASTAL ZONE ASSOCIATED WITH TOXIC SOLID WASTE. THE
NEED OF IMMEDIATE REMEDIATION.**

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ABSTRACT

The environmental impact of the Limni Mine Cyprus mining activities was assessed on the basis of a detailed geochemical study. It was revealed that the mounds of toxic solid waste occurring in the area have undergone a high degree of chemical weathering leading to a wide dispersion of metals such as Fe, Cu, Zn, As, Mn in the surrounding area, including the beach. As a result of this process large quantities of “pyrite sand” and its oxidation products occur on the adjacent beach, being a permanent source of toxic metals for the seawater. Other paths through which toxic metals enter the marine environment are the streams Argaki Limnis and Argaki Karioulasi.

Seawater solid waste interaction experiments using metal rich waste samples obtained from the beach showed that in the first two days of the experiment distinct mobilization of Zn and Cu was observed. Afterwards, their dissolved values decreased below the detection limit of the analytical method, possibly as a result of precipitation process or re-adsorption on bacteria. Considering the metal rich dust formed and food production taking place in this highly metal polluted area it is suggested that immediate action should be taken towards its remediation for the protection of the human health.