

Heavy Metal Contamination of La Paz's Water Supply Due to Mining Activities

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The Milluni Dams, located in La Paz, supply two of Bolivia's biggest cities with fresh water. However, their water quality is affected by legal and illegal mining activities, posing a threat to human health and nature. For this reason, it is important to monitor different points in this area and analyze what kind of species can be found there. This study locates four points for monitoring and sampling, with the aim to see the quality of the water and find out if it meets the current standards norms. The parameters measured were pH, dissolved oxygen, conductivity, turbidity, and temperature, also a Coupled Plasma Mass Spectrometer was used to see if the water contains metal ions. With this analysis it has been found that Milluni presents concentrations higher than the permissible limits of heavy metals detected as As, Cr, Pb, Hg, Cd, and Zn in all the monitored points. Other light toxic elements, such as Be, and elements that evolve to taste and smell, such as Fe, Mn, and Mg, were also detected. Moreover, the water presented acid pH. It is important to note that the water receives treatment before going into the water supply of the cities, but this process mostly concentrates on adding calcium carbonate to increase the pH and it can not guarantee that all the metals mentioned are removed. It is necessary to pay attention to this problem to avoid ecological and public health disasters.

Author: ASTETE DALENCE, Valeria (University of Bayreuth)

Presenter: ASTETE DALENCE, Valeria (University of Bayreuth)

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