

WATER QUALITY ANALYSIS OF HEAVY METALS As, Cd, Cu, Pb, AND Hg FROM ETANG SAUMATRE LAKE IN HAITI

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Etang Saumtre (Lac Azuie) in Haiti is a saline lake on the border between Haiti and the Dominican Republic. This lake will soon be facing a population increase of thousands of people as a result of the recent January 2010 earthquake. These people will be using the wells surrounding the Etang Saumatre for drinking water and domestic purposes. Etang Saumatre is also an important resource for subsistence fishers, feeding 25,111 people annually. It is important that water quality in the lake and groundwater be investigated in order to ensure that the resources are sufficient for human consumption. Moreover we need to better understand the connections between the lake and groundwater system to potentially mitigate any possible health concerns. Water samples were taken from Etang Saumatre and surrounding wells and the dissolved concentrations of arsenic, cadmium, copper, lead, and mercury were determined by ICP-MS. These heavy metals, known to be most hazardous to human health, are considered toxic at certain concentrations according to World Health Organization's Drinking Water Quality Standards (2008). The results showed that the concentrations of these metals were above the toxic level in most of the sampling sites. The results for cadmium, lead, and mercury also showed that there were similar concentrations between the groundwater wells and the lower depths of the lake which would provide evidence for groundwater flow into the lake.

Keywords: water quality, heavy metals