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Study and Verification of the Content of Arsenic (As), Cobalt (Co) and Copper (Cu) in Surface Water in the Region of Tirana City, Albania

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Abstract: In general, surface water is not clean in the environment. Heavy metals pollution presents a serious problem for human health and ecosystems. One of the most important techniques used to determine the elements in the environment and especially on water is classified method of Atomic Absorption Spectrometry (AAS). The purpose of this study was determination of content of arsenic-As, cobalt-Co and copper-Cu in different points of both Artificial and Farka lakes, in the region of Tirana City. (This water is not drinking water). The Artificial and Farka lakes have respective coordinates, Artificial lake (41°18'34"N and 19°49'5"E) and Farka lake (41°18'53"N and 19°51'49"E). We are collected a total of 17 surface water samples where 16 samples are surface water and one is a rain water. All water samples were analysed using Graphite Furnace Atomic Absorption Spectrometry (GFAAS) for their arsenic, cobalt and copper content. The concentrations level of As and Cu metals in surface water samples is compared with World Health Organization (WHO) and Environmental Protection Agency (EPA), European Union (EU), USEAP specified maximum contaminant level, (MCL). From the results obtained, none of the samples analysed contained As, Co and Cu concentrations above the MCL determined by different International Environmental Organizations. The results are presented in graphical form, while the concentration ranges of metals in samples collected at different points are presented in the table form. Analysis of this study was performed in the Centre of Applied Nuclear Physics, (CANP), Faculty of Natural Science, University of Tirana.

Keywords*: Heavy metals, surface water, Atomic Absorption Spectrometry*

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