

Study of Some Organic Pollutants in Water Samples of Shkumbini River, Albania

Elvin Çomo^{1*}, Aurel Nuro², Bledar Murta², Elda Marku², Elmaz Shehu², Alma Emiri²

¹*Institute of Geosciences, Energy, Water and Environment & Polytechnic University of Tirana, Tirana, Albania;*

²*Tirana University, Faculty of Natural Sciences, Chemistry Department*

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Abstract: The findings reported here are part of a study that determines concentrations and distribution of organochlorinated pesticides, PCBs and PAHs in the water samples of Shkumbini River. Water samples were taken in two periods, February and May 2013 in eleven stations of river, starting at Librazhdi Town up to Shkumbini river mouth in Adriatic Sea. Liquid-liquid extraction with n-Hexane solvent was used for extraction of organochlorinated pesticides (OCPs), their residues and polychlorinated biphenyls (PCBs) from water samples. Clean-up procedure was performed firstly with sodium sulphate (anhydrous) for water removing followed by clean-up procedures with Florisil column for. The organochlorine pesticides detected were HCB, HCHs (alpha-, beta-, gama- and delta-isomers), the DDT-related chemicals (p,p-DDE, p,p-DDD, p,p-DDT), Aldrines (Aldrine, Dieldrine, Endrine) and Heptachlors. Analyses of PCBs was based on the determination of the seven PCB markers (IUPAC Nr. 28, 52, 101, 118, 138, 153 and 180). Organochlorinated pollutants were measured by gas chromatography with electron capture detection (GC/ECD). Sixteen polycyclic aromatic hydrocarbons (PAHs) were measured in water samples by using gas chromatography with flame ionization detector (GC/FID). PAHs were extracted using liquid-liquid extraction assisted with Dichloromethane solvent. The levels of pollutants were higher during February because of the water higher flow in this period. Note that distribution for all analyzed pollutants were the same for both periods because of their same origin.

Keywords: *Organochlorine pesticides; PCBs; PAH; Shkumbini River; Gas Chromatography*

* Corresponding: E-Mail: elvincomo@yahoo.com; Phone: ++ 355 68 22 63 207 Fax: ++ 355 4231 120