



Determination of MTBE, TBA, BTEX and PAH in Sediment and Water Samples of Karavasta Lagoon

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Abstract : This study presented data about concentrations of MTBE (methyl, t-butyl ether), TBA (t-butyl alcohol), BTEX (benzene, toluene, ethylbenzene and o-, m-, p-xylenes) and PAH (poly aromatic hydrocarbons) in water and sediment samples of Karavasta Lagoon. Nine sediment and water samples were taken in different stations of lagoon in November 2014. Headspace solid phase micro extraction (HS-SPME) technique was used to trace MTBE, TBA and BTEX in sediment and water samples. For isolation of PAH liquid-liquid extraction assisted with Dichloromethane as extraction solvent were used for both samples. 1 L water samples were taken for each stations of Karavasta Lagoon for PAH analyze. The analysis of MTBE, TBA, BTEX and PAH in water samples was performed by gas chromatography technique using flame ionization detector (GC/FID). Injections of MTBE, TBA and BTEX were done in injector PTV directly by using Head-Space mode of Polydimethyl Siloxane fiber. 1 ul extract in Dichloromethane (extracting solvent) were injected for PAH analyses. VF-1ms capillary column (30 m x 0.33 mm x 0.25 um) was used for separation of BTEX and PAH compounds. Relatively high concentrations of BTEX and more volatile PAH compounds were detected in sediment and water samples of Karavasta Lagoon. The presence of volatile organic pollutants could be mostly of petrochemical industry impact in this area, automobiles transport near the lagoon, water currents and discharge of industrial wastes in the effluents of lagoon.

Keywords: MTBE, TBA, BTEX; HS-SPME; GC/FID; Water analyze; Karavasta Lagoon

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