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O 11. GEOSMIN AND 2-METHYLISOBORNEOL REMOVAL FROM AKSARAY'S TAP WATER BY POWDERED ACTIVATED CARBON

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ABSTRACT: G Geosmin(GSM) and 2-Methylisoborneol (MIB) and are responsible for musty-earthy taste and odor in drinking-water, a severe problem throughout the world. Due to the increasing perception in recent years, it has become necessary to remove these compounds from water. Compared to other methods, adsorption is known to be an accepted treatment method for GSM and 2-methylisoborneol removal. In this study, the removal of these compounds by adsorption with a commercial PAC carbon was investigated in Aksaray's tap water. The adsorption process was studied with seven isotherm models (Langmuir, Freundlich, Temkin, Dubinin – Radushkevich, Harkin-Jura, Halsey, and Redlich-Peterson) and four kinetic models (pseudo first-order, pseudo second-order, Elovich, and intra-particle). The results showed that the adsorption isotherm and kinetic model of GSM and MIB could be best described by the Freundlich isotherm and pseudo second-order kinetic model for both compounds. As a result of the study, it was found that due to the high organic matter found in Aksaray tap water, GSM and MIB concentrations could not be removed below the odor threshold value with PAC application alone.

Keywords: Adsorption, Isotherm, Kinetic, Taste and Odor, PAC