



Effects of Suspended Particles in Water of Terkuza River on Drinking Water Treatments[#]

Aida Shkurti*, Ismet Beqiraj, Marjola Kodra

Agricultural University of Tirana, Faculty of Biotechnology and Food Science; Department of Industrial Chemistry, Faculty of Natural Sciences, University of Tirana

Received June 11, 2011; Accepted December 15, 2011

Abstract: The content of suspended matter in Terkuza water has varied significantly during the study period 2004-2010, depending on atmosphere conditions, especially during winter, when values up to 1000 NTU were occurred, consequently worsening the process of turbidity removal. In Tirana's water supply plant is required a special water treatment process in order to meet the drinking water standard parameters. The pre hydrolysed poly-aluminium chloride sulphate (PACS) was used as coagulant in Jar tests and industrial plant tests in raw water from Bovilla's Reservoir in order to determine optimal conditions for coagulations. The variables under examination were the dose coagulant, hydrochloric acid and sodium hypochlorite, as well as the optimal pH value. The pre-hydrolysed degree of the coagulant, poly-aluminium chloride-sulphate was $B=0.72 ([OH^-] / [Al^{3+}])$. The efficiency of the coagulation process was evaluated for the scale of turbidity removal and residual elements in the treated water. The results found out in jar tests, for some of the most representative situation encored in practice, were applied into the industrial water supply plant of Tirana. The variables under examination were the removal degree of turbidity, the organic matter, the residual aluminium and the other elements. Achieved results reach the Albanian standards for drinking water.

Key words: Coagulation, turbidity, drinking water, PACS, pre-hydrolyses.

*Corresponding: E-Mail: aida.baci@yahoo.com; Tel: 0682016301

[#]This paper has been presented at Abalakes-2011 Elbasan, Albania