



TABACARIE LAKE WATER QUALITY MONITORING

Elisabeta Chirila^{1*}, Simona Dobrinas¹, Ionela Carazeanu¹, Camelia Draghici²

¹"Ovidius" University, Chemistry Department, 124 Mamaia Blvd, 900527 RO Constanta, Romania, ²"Transilvania" University, Chemistry Department, Iuliu Maniu 50, Brasov, Romania

Abstract

Water quality monitoring is a very important task in environmental studies worldwide. The aim of this paper is to present original results concerning Tabacarie Lake water quality parameters monitoring in the last nine years.

Tabacarie Lake is located in Constantza district on the Black seaside coast, having a surface of about $9.5 \times 10^5 \text{ m}^2$ and an average water volume of about $1.7 \times 10^6 \text{ m}^3$.

Eight sampling sites were established around the lake and analyses were carried out weekly, six months per year. *Alkalinity*, *Chemical Oxygen Demand* by potassium permanganate method (CODMn), *Dissolved Oxygen* (DO), *Total and Calcium Hardness*, *Salinity* and *Sulfides* were the monitored quality parameters, using standard titrimetric analytical methods according to Romanian regulations.

The obtained data were processed using chemometric procedures and shown interesting patterns. The yearly averages of the quality parameters for all sampling sites ranged as follows: "p" alkalinity 0-1.03 meq/L, "m" alkalinity 4.39-7.23 meq/L, CODMn 2.17-18.02 mgO₂/L, DO 2.21-12.36 mg/L, total hardness 4.32-9.67 meq/L, calcium hardness 1.55-4.73 meq/L, salinity 0.23-0.51 g/L and sulfides 0.85-0.99 mg/L.

The values of quality-monitored parameters are variable in quasi-large ranges, depending on the position of the sampling sites and the seasonal characteristics, but excepting sulfides all of them are in the limits imposed by the last regulations.

Keywords: lake water, alkalinity, CODMn, dissolved oxygen, hardness, salinity, sulfides

* Author to whom all correspondence should be addressed: Phone: 0040241614576, Fax: 0040241618372, e-mail: echirila@univ-ovidiu.ro