

Preliminary Studies Of Water Quality In The Ouro Preto City Region (Minas Gerais- Brazil)

¹PIMENTEL, H.S., ²LENA, J.C. and ¹NALINI JR., H.A.
¹DEGEO/Universidade Federal de Ouro Preto (UFOP), Ouro Preto, Brazil; ²DEQUI/UFOP, Ouro Preto, Brazil.

The area is located in the southeastern of the Quadrilátero Ferrífero, in the Rio Doce basin, Ouro Preto city region, in the state of Minas Gerais. The main goal was to investigate the quality of water supply of Ouro Preto city and region, using physical-chemical parameters. The sampling was carried out in September/1999 (dry season) in 22 stations (springs, old gold mines and drainage).

The sample analysis results displayed the following intervals: pH (6,0-7,3); temperature (14,4°C-20,6°C); salinity (0,0-0,15‰); Total Dissolved Solids (4,0-28,1mg/l); conductivity (8,30-62,7µS/cm); turbidity (0,0-0,8FTU); calcium (0,00-7,80mg/l); sodium (0,12-19,1mg/l); potassium (0,11-6,67mg/l); magnesium (0,70-30,5mg/l); chlorides (1,94-14,1mg/l); total alkalinity (bicarbonate) (2,66-32,0mg/l). The sulfate values present two regions (0,00-9,15mg/l) and (198-247mg/l). These values are below the limits, considered acceptable by brazilian legislation (250mg/l). There was, however, four stations which presented higher values for the sulfate content (371mg/l; 396mg/l, 842mg/l e 3,34g/l). One of these four stations presented special higher values for the several parameters: TDS 144mg/l; conductivity 300µS/cm, alkalinity (bicarbonate) 107mg/l; calcium 38,2mg/l; potassium 14,4mg/l and magnesium 170mg/l. These values refer to the Passagem de Mariana Gold Mine, whose mineralogy is represented by dolomitic carbonates and sulfides.