

**Hotlos, H. Analysis of Influence of Meteorological Factors on Water Demand Variations in Municipal Water Supply System. *Ochrona Srodowiska* 2013, Vol. 35, No. 2, pp. 57–62.**

**Abstract:** Analysis of variations in daily water demand in relationship to meteorological factors, *i.e.* air temperature and rainfall intensity, was carried out for the city of Wroclaw and the year 2011. 60% of water pumped into the supply system was consumed by households, 22% was used for other communal purposes, while 18% constituted water utilized by the system itself as well as water loss. Studies of the relationship between water demand and meteorological factors were performed for individual months, when the number of residents was almost constant. The relationship, in numbers, between water demand and air temperature (average and maximum) as well as rainfall intensity was estimated separately for working days (including Saturdays) and non-working days (Sundays and holidays). The statistical analysis performed implies strong influence of maximum daily air temperature on daily water demand in summer months (from May until August). Water uptake in May, June and July on days with the highest maximum temperature was higher by 11.8%, 11.1% i 13.3% respectively, than on days with the lowest maximum temperature. A noticeable influence of rainfall intensity on decrease in water demand was identified on working days in June, the warmest and the driest month in the analyzed year.

**Keywords:** Water supply, water demand irregularity, air temperature, rainfall.