

# The hydrogeologic structure at Ochiai region, Shinjuku Ward, Tokyo Metropolis

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We, Earth Science Club of Kaijo Junior & Senior High School, have researched the environment of groundwater around our school since 2009 for 9 years. As a part of the research, we have observed groundwater level at 2 points in Takadano-baba region. The first place, the eastern part of Musashino plateau including Takadano-baba is not rich in groundwater, so it is not dealt with in groundwater research in Tokyo. Based on this phenomenon, we shall consider the shallow groundwater in the eastern area of Musashino plateau from the viewpoint of hydrological geology.

Generally, shallow groundwater in Musashino plateau shows a series of rising and falling fluctuations according to precipitation events. Fluctuation graphs of the individual events are basically all similar figures, and short-term fluctuations other than at the time of precipitation can hardly be found. In our observation well, however, this phenomenon occurred eight times during the observation period between November 2015 and October 2016, and the maximum falling was about 2.3 m, exceeding the maximum increase due to precipitation.

Since this phenomenon always occurs when the groundwater level falls to about 28.3 m T.P., it is considered that geological factors are causing this phenomenon. According to the boring data, this elevation is close to the interface between the permeable Musashino loam and the poorly water-permeable Shimosueyoshi loam. However, it is unlikely that the groundwater level drops quickly in the poorly permeable stratum, i.e., a discrepancy arises between the phenomenon and the geological structure. This phenomenon is also introduced in "Conservation of groundwater and spring water in water circulation" (edited by Tokyo Groundwater Research Association, 2003) as "sawtooth type".

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