The spring in the Otomeyama Park, Shinjuku ward and the recharging area of the ground water around there

*Taiga Suzuki*

1. Kaijo Senior High School

There is a spring in Otomeyama Park Shimo-ochiai area in Shinjuku Ward, Tokyo, which is precious place in city environment. We have observed discharge from the spring and water level at the well nearby, and studied the data for 7 years.

We have developed a model that represents variations in ground water level, based on the precipitation and groundwater level data, and estimated the area which has precipitation data that we could calculate groundwater level the most accurately by using it, considered as recharging area. However, the area was not inspected enough, so we tried to estimate the recharging area more accurately taking landform and geology into consideration.

The estimated area lies on the northern area from the spring: about 10km². There is a former river channel in the area north of the spring from west to east with an altitude of 20m T.P. and on the north-eastern part of the area 26m T.P. and a ground in south-eastern part of the area 35m T.P. that it ridges extend north-east and east: 4km². The stratigraphy of this area is the permeable Musashino Loam, the hardly permeable Shimo-suekichi Loam, the permeable Musashino gravel Bed, the Tokyo Formation impermeable and the permeable Tokyo gravel Bed, from the top. The Musashino gravel Bed is the aquifer of the spring, considering the altitude of the spring. And groundwater is under pressure: the groundwater level of the well is higher than Musashino gravel Bed. We draw a geological section based on the drilling data which Tokyo Metropolitan Government Bureau of Construction releases. Then we found that the aquifer, Musashino Gravel Bed, is inclined to north-east, following the topography of the surface. It is consistent in the preceding study saying that the groundwater surface of Musashino plateau is similar to the shape of the surface. Therefore, there is little supply of water from north-eastern part of the area, and south-western-part of the area supplies water to large area including the spring. The slope of the plateau is very gentle, so clear watershed do not exists probably.