

# Some factors controlling chemical compositions of groundwater at Shimousa upland-Noda city, Chiba-

# Yoichi Muramatsu[1]; Momoko Fukuda[2]

[1] Fac.Sci. and Tech.,Tokyo Univ.Sci.; [2] Fac.Sci.,Tokyo Univ.Sci.

Chemical compositions of twenty-two groundwaters, and alteration minerals from cuttings and shell fossil obtained by drilling a test well (depth of 44m) were analyzed to clarify the water-rock interactions conducted to the chemical composition of the waters in aquifers above 200 m depth at the Noda city, Chiba. There are four aquifers (first surface, second, third and fourth aquifers in descending order) whose water compositions are Ca-HCO<sub>3</sub> type. Ca<sup>2+</sup> and HCO<sub>3</sub><sup>-</sup> contents gradually increase with depth. Saturation index of aragonite and calcite, and pH of the waters gradually increase with depth. Quartz and plagioclase as primary minerals, and kaolinite, Ca-montmorillonite and halloysite as secondary minerals are found in the first aquifer. Based on these data and presence of shell fossils in the Kioroshi and Kami-iwahashi Formations, the increases of Ca<sup>2+</sup> and HCO<sub>3</sub><sup>-</sup> contents with depth are interpreted by the following two mechanism: (1) dissolutions of calcite and aragonite as the shall fossils, and (2) formation of kaolinite and Ca-montmorillonite by weathering of plagioclase.