

Geochemical study of groundwaters in the Noda field, Chiba

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Major and minor chemical constituents in thirteen groundwaters (twelve wellwaters and one spring water) from the shallow wells, and alteration minerals in aquifers at the Noda field, Chiba were analyzed. We discuss water-rock interactions to make chemical properties of the groundwaters. There are three aquifers (Near surface, shallow and deep aquifers) whose compositions are Ca-HCO₃ type. Ca and HCO₃ contents gradually increase with depth. Saturation index of aragonite and pH of the waters are -1.6 to -1.0 and 6.9 to 7.1 for the near surface aquifer, -0.4 to 0.1 and 7.7 to 7.9 for the shallow aquifer, and 0.0 to 0.3 and 7.8 to 8.0 for the deep aquifer, respectively. Kaolinite and plagioclase are found in the aquifers using a XRD. Based on these data and existence of fossil shell in the Kioroshi Formation, the feature of Ca and HCO₃ contents with depth is interpreted by the following two mechanism: (1) dissolution of calcite and aragonite as the fossil shell in the Kioroshi Formation, and (2) formation of kaolinite by weathering of plagioclase.