

THE HYDROGEOCHEMICAL STUDIES ON SALINIZATION OF SHALLOW GROUNDWATER AT YOUNGKWANG AREA

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For the study, the measurement of chemical and physical properties of groundwater and surfacewater was carried out. The most part of the study area is a plain area used for agricultural activities and high lands of approximately 150m above sea level are at northern-east area and GaJi Mountain of 50m above seal level and YiMin village are located in the middle part. Core logging samples show that the aquifer of the study area is composed of mud to 10~15m of depth, sand to 25m of depth, and the depth of granite bedrock is about 25m~30m. Electrical conductivity(EC) of groundwater at the coastal area generally depends on the distance from the seashore but EC of shallow aquifer far away seashore in the study area is higher than that of seashore groundwater. That Na, Cl, SO₄, Br values of groundwater at YiMin village show spatial characteristics higher than those of seashore area. The Br/Cl ratios of groundwater at YiMin village are similar with that of seawater. Nitrate(NO₃) contents are generally high at the most area, but low only at YiMin village. Considering this area is agricultural and shallow aquifer, enriched seems to be contaminated by fertilizers from agricultural activities. EC change by tidal effect between high tide and low tide is not so much. In order to investigate appropriate salinization mechanism of groundwater, iodide concentration is analysed from groundwater samples. The I/Cl ratios of groundwaters at YiMin village are 1~2 order higher than that of seawater. The above mentioned data show that the iodide enrichment is caused by marine mud, and iodide in groundwaters squeezed from marine muds. It could be the salinization of groundwater in the study area seems to be due to residual salts or residual marine sediments.