

Evaluation of effect of urbanization affect to chemical aspect of groundwater in Tokyo Bay area

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The Kanto Plain is the largest groundwater basin and the most exploited region of groundwater resources. Especially, urbanization and exploitation have been started earliest in the Tokyo Bay area. Therefore, groundwater in this area has been strongly affected by human activity such as decreasing of groundwater level and land subsidence. For instance, groundwater level in 1960's was decreased to TP-60m in Koto ward. Also, these influences were observed in not only inland area but also sea area. But, there are a lot of uncertain points about what influence has been affected to chemical aspect of groundwater and groundwater flow by human activity. The objective of this study is to clarify the influence of human activity to groundwater in not only inland area but also sea area.

In Tokyo lowland, dissolved ions of groundwater, which was collected in the depths deeper than TP-50m, increase from the northern part toward the southern part. Also, the groundwater, which have high concentration of dissolved ions, were distributed in from southern part of Tokyo lowland to around of Port of Tokyo. The Cl⁻ concentrations of the groundwater are from about 100 to 2,500 mg/l. Water quality of collected groundwater is similar to deep groundwater, from the comparison of the ratio of dissolved ions. It is estimated that this part is discharge area of regional groundwater flow system in the Kanto Plain, from the previous study. Therefore, it is estimated that the dissolved ions with high concentration had been added from sediments. Also, it is suggested that seawater had not infiltrated in the depth of this study in the period of low groundwater level.