

Groundwater flow model include deeper part in Gora region, Kanagawa Prefecture

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Recently, the necessary for the study of deeper groundwater flow is getting recognized not only for scientifically but also socially, as one of the methods for solving the problems of dumping of radio active waste into deeper underground or for sustainable hot springs use. Due to the media reports for the hot springs problem, the focus is intend upon quality of water, however, its important to know the quantitative problem as background of the problems. The hot springs problems are solved by the analysis based on the proper understanding of water circulation, because it is difficult to control the change in geochemistry or subsurface structure. The request to hydrologists includes the quantitative understanding of limited pumping amount or that of reserve of hot springs. To clarify the knowledge will serve the guideline for criterion of sustainable hot spring use.

It is, however, difficult to study the deeper groundwater flow by method other than the groundwater simulation, because of the cost and time. Furthermore, the time scale of deeper groundwater flow often attains several hundreds or thousands. Therefore, the challenge of the study is to obtain the simulation results with the practical data, as possible. The modeling is the most important order in this method. In volcanic area with complex geology, it difficulties must result from the lack of hydrogeological data. So, scientists needed the basin with many hydrogeological information for constructing a reliable model, however, there are very few such a basin.

In this study, as the study area, Gora region in Kanagawa Prefecture was chosen, because this basin includes more than 250 wells and 50 data for electric logging and temperature profiles. In addition, groundwater quality data is stored for more than 30 years and many groundwater studies have been carried out. So this basin is one of the best regions for deeper groundwater study. The goal of the study is to simulate deeper groundwater flow, but I am planning to discuss the model construction in meeting.