Japan Geoscience Union Meeting 2010
(May 23-28 2010 at Makuhari, Chiba, Japan)

AHW015-04 Room: Function Room B Time: May 27 11:40-11:55

Analysis of recharging processes of ground water in an alluvial fan using water dating techniques

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In order to estimate recharging process of groundwater in an alluvial fan, we measured SF6 concentrations, oxygen and hydrogen isotope ratio of water and other dissolved chemicals in spring water, ground waters and river waters with hydrological observation in Fukasawa River Watershed, Yamanashi Japan.
The residence time of spring waters in the upstream were less than 0-5 years, while those in the alluvial fan were 18-26 years calculated by SF6.
SiO2 concentrations correlated with those of SF6.
In addition, we found the decrease of specific discharge in accordance with decrease of elevation indicating that surface water recharges ground water in the mountain body. The results imply that the groundwater in the alluvial fan was recharged by drainage from upstream watershed.
we also discuss recharge area of groundwater in the alluvial fan using information of oxygen and hydrogen isotopes of water.

Keywords: SF6, oxygen and hydrogen stable isotope, residence time, alluvial fan, recharge, discharge