

## An effect of river water on the occurrence of groundwater in alluvial fan - A case of the lower reaches in the Kurobe River -

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A study on groundwater flow in the Kurobe alluvial fan has been conducted by using various physicochemical properties as a tracer. According to the result obtained from previous studies, a common concept, including the existence of two kinds of groundwater flow systems has been supported in the Kurobe alluvial fan. It was pointed out that recharge sources of phreatic groundwater are precipitation, river water, and irrigation water and those of confined groundwater are mainly river water and seepage water from shallow aquifer. A discussion on the seepage phenomenon from shallow aquifer to deeper layer has, however, been left for further investigation.

The purpose of the present paper is to make clear an influence of the Kurobe River on groundwater in alluvial fan by using water temperature, pH and electric conductivity as a tracer. Judging from the result as obtained in December 2002, temperature of groundwater varied over a wide range, 8.0 ~ 14.5 C and showed a tendency to increase with increasing distance from the channel of the Kurobe River. It is considered that lower groundwater temperature has been appeared as a result of seepage from cool river water. According to the horizontal distribution of groundwater temperature, it is pointed out that an effect of influent seepage from the Kurobe River has extended over rather wide area. It is also considered that river water has an effect on the deeper aquifer. A result of measurements on pH and electric conductivity supports the same hypothesis as mentioned above. It is concluded that river water plays an important role in the recharge of groundwater in the Kurobe alluvial fan.