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Dynamical variations in groundwater chemistry influenced by intermittent water delivery at the lower reaches of the Tarim River

作者: CHEN Yongjin CHEN Yaning

The water of Bosten Lake was released to lower reaches of the Tarim River for 5 times from 2000 to 2002. The changes of total dissolved solid (TDS) and the major ions (SO■■, Cl■, Na■, Ca■, Mg■ and HCO■■) were analyzed during this period. It was found out that TDS and the concentrations of the major ions initially and quickly increased and then decreased, but finally increased again. These changes were different at different distances from the river, which indicated that the groundwater changes relied on the distance from the river. In addition, the salt in groundwater was only diluted but not removed by the water. It was suggested that ecological measures should be sought to really promote the quality of the groundwater at the lower reaches of the Tarim River.

Paper (PDF)

关键词: water delivery; groundwater chemistry; hydro-salinity movement; the Tarim River