Geophysical Research Abstracts,
Vol. 10, EGU2008-A-08383, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-08383
EGU General Assembly 2008

Environmental isotopic composition of natural water in ordos cretaceous groundwater basin and its significance for hydrological cycle

A. SU Xiaosi (1), B. LIN Xueyu (1) C. HOU Guangcai (1,2) D. DONG Weihong (1)
(1) Jilin University, Changchun, China;suxiaosi@jlu.edu.cn / Fax: +86 431-88502595

(2). Institute of Xi'an Geology and mineral Resources, Xi'ančňChina

Environmental isotopic composition of natural water in Ordos Cretaceous groundwater basin indicates that the$g\delta^{18}$O and δD of all the surfaces water lies in the evaporation line with the slope lower than the local meteoric water line (LMWL), which signifies the effect of evaporation on the surface water. The groundwater is of meteoric origin resulted from the fact that the groundwater in CGB is mainly distributed along LMWL. It is interesting that the δ^{18}O and δD of groundwater in southern CGB and northern CGB has different distribution features, which signifies that the differences of hydrological cycle in southern CGB and northern CGB. In southern CGB, there exists no or weak hydraulic links between different aquifers and the groundwater flow is dominated by lateral inflow with the depth of up to 160 m involved in modern actively hydrological cycle. But in northern CGB, there is a close hydraulic links between different aquifers and the groundwater flow is characterized by vertical inflow with the depth of up to 2000 m involved in modern actively hydrological cycle. The shallow groundwater is characterized by rich tritium concentration and high ^{14}C activity, which implies that the shallow groundwater is recharged in modern time, but the deep groundwater is characterized by poor tritium concentration and low ^{14}C activity, which implies that the deep groundwater is recharged in geologic time.