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Interaction between the Iska River and the Ljubljansko Barje aquifers

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The system of vertically stratified aquifers on the area of the Ljubljansko Barje (i.e. water field Brest) is among the biggest and important drinking water source for central part of Slovenia, including the capital. In the past pollution of groundwater with some specific persistent inorganic pollutants in the lower porous aquifer was detected. To determine origin and intensity of pollution a complex pumping test was performed in autumn 2009 on different wells in the water field Brest.

The conceptual model of the Ljubljansko Barje discusses about three rather well separated aquifers. The topmost one is directly fed by the Iška rive which flows on the western border of aquifers. To confirm the conceptual model of the system as well as to confirm hydraulic connection between aquifers a intensive pumping experiment was performed in November and December 2009. During the experiment the groundwater level measurement and groundwater quality sampling was carried out. In addition, subsurface fauna was sampled to find similarities between three aquifers. Due to technical problems (damage of animals during pumping) only some representatives of subsurface fauna were collected. Preliminary analyses of fauna confirmed rather rich subterranean fauna with Coppepoda and Amphipoda as dominant groups. At the same time, deep-groundwater aquifer (-50-100 m differs completely from shallow-groundwater aquifer (-7-25 m) which indicates direct connection with the nearby Iška River. Detailed analyses of fauna are in progress.