

Article N°1:

Geophysical mapping of aquifers in Bolivia

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Electrical Resistivity Tomography (ERT) and Transient ElectroMagnetic sounding (TEM) is used for aquifer mapping in Bolivia. The results demonstrate the value of using geophysics in hydrogeological investigations of quaternary deposits, and that the methods are complementary so that the combination is beneficial. ERT produced highly useful results for delineating the aquifer geometry and internal aquifer structure, detect variations in sediment composition and locate areas with anomalous water composition. ERT proved to be very robust despite possible sources of disturbances in the form of powerlines and other infra structure. The depth penetration is however not always sufficient with the spreads mostly used here. TEM proved to be useful for reaching larger depths, although the application of the method is restricted in parts of the areas due to various man-made objects that cause coupling problems. TEM delimited a rather thin saline layer at the base of the Punata aquifer, which will contribute to enhance the local groundwater management and exploitation.

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