

BOUNDARIES OF GEOTHERMAL BASINS IN NORTHEASTERN ARGENTINA

PESCE, A.H.. Geothermal Department, IGRM/SEGEMAR, Buenos Aires, Argentina.

A remarkable geothermal development has been produced in the past few years in northeast Argentina. A large sedimentary basin, known as Chaco-Paraná, occurs with two aquifers bearing thermal fluids. For the analysis of the basin, 200 deep oil exploration wells, distributed in Argentina, Brazil and Uruguay have been processed and by means of 3-D modeling. For this work, a single stratigraphic column was adopted taking into account facies changes, correlation, stratigraphy, chronostratigraphy, and paleochrono-stratigraphy. Also, generalizations and chronostratigraphic grouping from the different sub-basins were performed. The correlation of formations becomes a methodological necessity, since the study comprises a huge area not covered completely by a single geological unit. As a consequence of this, the stratigraphic divisions produced by underground exploration, showing large sedimentary cycles, usually coinciding with transgressive and/or regressive stages, or those separated by significant regional discordances, produced by continental orogeny, were preferred. Through 3D modeling, thicknesses, evolution and geometry of the basin were reconstructed, showing its connection with the Parana basin in southern Brazil. Isopach and basin maps for each considered stratigraphic unit were produced as a guide to geothermal exploration in northeastern Argentina. The study of neopaleozoic-eopermian fluvial, lacustrine, glacial and glacialmarine Sachayoj, Charata and Chacabuco Formations, and triassic-jurassic continental sandstones of the Tacuarembó and Rivera Formations was emphasized, since these units host the thermal aquifers under research.