



Evidence of Formation Scaling Occurred in the Chingshui Geothermal Field, Taiwan

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Taiwan is located at the margin of young orogenic belt which the Philippine Sea plate collides with Asian continental margin. It is characteristic that the geothermal outcrops and hot springs are widely distributed in this island and has great potential to explore and develop the geothermal heat for power plant. A 3-Mw pilot power plant, therefore, was constructed in 1981 in the Chingshui area, northeastern Taiwan. However, due to rapid decline of power generation from 1.2 MWe to 0.2 MWe and shortage of economic efficiency, this plant was terminated in 1993. Most of the engineers and researchers considered the important reason for termination may be resulted from carbonate scaling, based on the findings of calcite deposits inside well pipe. A production well with the depth 1,500 m has been drilled into the reservoir of slate host rocks and raises 200 m cores between 600 m to 800 m in depth. Many calcite or aragonite minerals filled up the fractures, veins and open cracks have been found in the cores. Meanwhile, surface survey on outcrops shows that there are many quartz veins occurred in slate formation, but a few or no calcite veins. Those lines of evidence strongly suggest that the formation scaling rather than carbonate precipitations inside the wells termination of power plant have been occurred in the Chingshui geothermal field.