

# **Fluid Compositions and Reservoir Temperature of Toucheng-Jentse Geothermal Field, Northeastern Taiwan**

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The Toucheng-Jentse geothermal fields are located at the geological terrane, the Lushan slate Formation of central Range, Taiwan. The Toucheng geothermal field could occur the carbonate scaling in the wells as the Chingshui's case during thermal productions for power plant. We have collected 17 water samples (including surface outcrops and well heads), 9 gases (including surface outcrops and well heads) and 14 quartz veins, sinters and carbonate scaling. Meanwhile, also compile published geochemical data in this study. Based on sinter precipitations in outcrops, silica geothermometer on hot springs and drilling results, the temperature of reservoir could be up to 238°C. Besides, temperature of fluid inclusions on quartz veins are 360–420°C, which indicate the thermal fluids from the depth could be up to 400°C. Additionally, the study of scaling occurred during the thermal water productions is also the aim for this study. Generally, the silica sinter precipitates due to temperature dropped, which will occur in heat exchanger and re-injection wells. However, the scaling of carbonate occurs due to pressure decreasing and CO<sub>2</sub> degassing in production wells. For inhibiting carbonate, we refer the methods from domestic and international techniques. Furthermore, use the software “WellSim” to predict the hole bottom temperature and flashing depth in the wells of Toucheng No. 14, No. 15 and No. 16 being 131.8°C and 21 m, 179.0°C and 296 m, and 170.24°C and 732 m, separately.