

## **NEW EVIDENCE AND CONSTRAINTS ON THE AGE OF THE CHILLAGOE KARST**

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### **ABSTRACT**

Red Dome and Mungana gold and base metal deposits and several other mineral deposits in the Chillagoe district contain central conical-shaped, red, oxidised breccia columns, which extend vertically for up to 400 metres through limestone host rocks. These were traditionally described as karst collapse breccias until in 1992 I found overwhelming evidence that these were formed by upwelling hot acidic geothermal fluid and steam. These breccias and associated surface silica sinters occur throughout the district that shows that over this entire area the current surface was also the surface at the time of this geothermal activity. The breccia columns and sinters are clearly related to rhyolite volcanic domes and sub-volcanic intrusive bodies, which are dated at around 290 million years (Early Permian). A cover of younger rocks, initially Permian volcanics and later Jurassic – Cretaceous Carpentarian Basin sediments, preserved this palaeosurface, which is now exposed due to erosional stripping of the cover rocks.