

## **ELECTROMAGNETIC SOUNDINGS OF THE REGOLITH AT KALKAROO MINERAL PROSPECT, CURNAMONA PROVINCE, SOUTH AUSTRALIA**

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Large parts of Australia are blanketed with a thick regolith that masks mineral deposits. Time Domain Electromagnetic (TEM) technique is a proven method for imaging structures below or within the weathered overburden. Four NW-SE SIROTEM transect lines (three 1.5 km long and one 2.5 km long) were conducted over a magnetic anomaly in the Cu-Au Kalkaroo prospect in the Curnamona Province (S.A.). The TEM survey geometry used 100 metre square transmitting loops with an in-loop central receiver coil and 100 metre station spacing to maximise penetration into the electrically conductive overburden. Initial results of the survey, following a “STEMINV” smooth model inversion process, suggest the TEM soundings penetrate to a depth of 100-150 m and reveal the presence of conductive regolith overlying a resistive zone. Furthermore, the 2 D depth-resistivity image obtained for all the TEM transects clearly indicates the presence of a highly conductive layer within the regolith at a depth of about 20-50 m. Through correlation with nearby drillhole data and potential field data, this conductive zone is interpreted to be the Namba Formation. The TEM results also indicate some of the structural features of the basement.