

Geochemical Variation of Carbonates Close to the Tin Ore Deposits

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Abstract : Geochemical variations of the Proterozoic dolomite samples close to the ore deposits in the Renison mine area, Tasmania, Australia, are the result of alteration. The oxygen isotope values of the most altered dolomites surrounding the ore deposit indicates that these are affected by hot (up to about 350 °C) hydrothermal fluids. There is a trend of decreasing lighter oxygen and carbon isotope values towards the ore deposit. Carbon isotope values in dolomites are significantly lighter than those least - altered dolomites away from mineralised area, due to alteration ranging from 47 to 95% . Oxygen isotope values are also significantly lighter close to the ore deposit, than less altered samples away from mineralised area. Alteration in oxygen ranging from 20 to 97% . Geochemical analysis also indicates that Fe and Mn are very high but Ca, Mg, Sr and Na are very low in dolomite samples close to the ore deposits. Thus, the result of this study shows that the gradual decreases in oxygen and carbon isotope values, which corresponds to the increasing alteration percent, towards the orebody, along with elemental compositions, are useful for recognition of ore deposits.

Key Words : *Isotopes, Ore Deposits.*