Worldwide anorthosite rich layered intrusions in Archaean granulite terrains have been observed and studied extensively for their economic potential to host several major minerals (e.g., Cr, PGE, Fe-Ni etc.,) (Ashwal, 1993). Rutile occurs in significant abundance in most metallic ore deposits, and irrespective of metamorphic grade, is most plentiful in sulfide-bearing deposits where high fS2 and/or fO2 conditions stabilize rutile at the expense of ilmenite, especially in the presence of minerals such as pyrite and hematite. Rutile is also persistent in weathering environments, and is likely to survive weathering and significant transport by secondary processes. Until the present study, there have been no broad-based surveys of rutile compositions in our country. The largest example of an anorthosite complex, or one of the layered intrusion containing dominant anorthosite layers, is Sittampundi in Tamil Nadu, Southern part of India. During our reconnaissance survey for chromite in Sittampundi complex. In petrographic studies we found grains of rutile in different textural settings typically occurring as exsolutions in chromite, and as detrital grains in the silicate matrix. In this paper, we describe the rutile in relation to the texture and composition of chromite and use rutile as potential indicator mineral for future exploration target. For the first time QEMSCAN is utilised for this study.