

REE MINERALIZATION AT BARRA DO ITAPIRAPUA ALKALINE CARBONATITIC COMPLEX, SP/PR, BRAZIL

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The Barra do Itapirapua alkaline-carbonatitic complex shows three ankerite carbonatite bodies with REE mineralizations. The most important one is related to a portion of the Serrana ankerite carbonatite body, called Área de Detalhe I, whose minerals are here described. The REE minerals and the others mentioned in this work were studied by scanning electron microscopy with backscattered electrons image and microanalysis by EDS and X ray diffraction. The main REE minerals are represented by REE fluorcarbonates, mainly bastnaesite, sometimes showing syntaxial intergrowth bastnaesite/parisite; secondary monazite/rabdophane and aluminium phosphates, probably related to REE fluorcarbonates alteration, can also be found as minor phases. Bastnaesite crystals show a typical aciculate habit, occurring as single small individuals (15 by 1µm in average) as well as fibrous radiated aggregates. It is usually associated with quartz as well as disperse in fluorspar, iron oxides/hydroxides, hollandite and calcite. Others potential valuable minerals identified are fluorspar, apatite and pyrochlore. The main gangue minerals are represented by iron oxides/hydroxides, quartz, calcite, barite, hollandite, aluminum phosphates, ankerite and siderite. The REE mineralization should be related to two factors: percolation of hydrothermal solutions in the fractures zones or dissolution of the pre-existent carbonates followed by hydrothermal deposition and by the weathering process with leaching of the more unstable elements and the deposition of new REE minerals. The results and data attained allowed to define different types of REE mineralized materials that are being detailed by technological studies.