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ABSTRACT

THE MINERALOGY AND ORE MINERAL ASSEMBLAGES OF THE ULTRAMAFIC ROCKS OF TOBAGO, WEST INDIES

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Alaskan-type ultramafic rocks of mid-Cretaceous age are exposed on the island of Tobago and are classified as dunites, wehrlites, pyroxenites and hornblendites due to the variation of the essential ferromagnesian minerals, olivine, pyroxene and hornblende. Chromite which is generally found in accessory amounts is sometimes present to levels as high as 15% by volume. The ultramafic rocks are a part of a larger fractionated body which includes gabbro, diorite and minor tonalite. The plutonic complex intrudes the North Coast Schist Group and the Tobago Volcanic Group and represents a period in which magmatic activity was related to volcanic arc growth.

Associated with the ultramafic body are several Fe-Ni-Cu sulphide and PGE minerals. Pyrrhotite, pentlandite, pyrite and chalcopyrite are the main sulphide phases. Pyrite and chalcopyrite are commonly associated with the pyroxenites and hornblendites whereas pyrrhotite and pentlandite are the dominatant sulphide phases in the dunites, wehrlites and their serpentinized equivalents. PGE minerals are rare compared to the sulphides, however small grains of a PtS mineral were identified in a hornblendite. An associated composite PGE grain containing Rh,Ir ,Pt,Cu,As and S is also present. Both the sulphide and PGE mineral phases are primary phases and not remobilized secondary phases.