



**THE Re-Os ISOTOPIC SYSTEMATICS AND PGE SIGNATURES OF CHROMITES FROM THE CAMPO FORMOSO AND JACURICI VALLEY MAFIC-ULTRAMAFIC STRATIFORM COMPLEXES OF NORTHERN BAHIA, BRAZIL**

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**ABSTRACT**

The Campo Formoso (CF) and Jacurici valley (JC) chromite districts of Brazil (Bahia state) are located in the northern part of the São Francisco Craton and host the largest reserves of chromite in the country. The two districts occur on the tectonically and geochronologically complex zone in which the Gavião, Serrinha and Jequié terrains were sutured together during the *ca.* 2,0 Ga Transamazonian orogeny related to the Itabuna-Salvador-Curaçá paleoproterozoic mobile belt. The age of the two deposits have variously been ascribed to the middle Archean (3,2 + Ga), late Archean (2,5 Ga -2,7 Ga), or Paleoproterozoic (2,0 Ga). Platinum group elements (PGE), including Os isotopic composition indicate that the JC chromites analyzed are from the main mineralized level and have an age of 2.663 Ma, assuming derivation from an upper mantle source reservoir. The CF chromites have less radiogenic <sup>187</sup>Os/<sup>188</sup>Os values and give an older age of 3.274 Ma. The CF chromites also have original magmatic differentiation trends preserved, and show enrichment of platinum affinity platinum group elements (PPGE) over Iridium affinity PGE (IPGE) and increasingly radiogenic <sup>187</sup>Os/<sup>188</sup>Os values with stratigraphic height, likely signifying crustal assimilation in amounts similar to values reported elsewhere for the JC upper level chromites (~30 %). The crustal contamination in the form of assimilation or magma mixing was an important factor for initiating chromite formation at higher levels in both deposits. Osmium isotopic compositions and resulting model ages are significantly different between the two deposits and are a probable indication of unrelated origins.