

ABSTRACT

The analysis of lead isotopic ratios from numerous mineral deposits from Mexico show a tendency of increasing the radiogenic component of lead from the west coast, near the Middle America Trench, which represents the topographic expression of the subduction of the Cocos Plate beneath the North America and Caribbean Plates, to the east coast where we usually encounter the highest values. This increase is mostly due to the assimilation of radiogenic Pb from the east-northeasterly thickening crust of the overriding plate. Two deposits (La Verde and Esmeralda) from the south-southwestern part of the Trans-Mexico Volcanic Belt show anomalous values however, not characteristic for the area. These values are the highest ever encountered in Mexico, and even in Central America, until now. The intricate tectonic and geologic structure of the area might provide an explanation to the presence of these anomalies.