

**Inclusion Petrographic and Fire Assay Studies on PGE and Au Bearing
Deccan Trap Flows from Mangalwedha Taluka Solapur District,
Maharashtra**

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Considering the ever increasing need for gold and PGE metals the mental outlook of the exploration geologist is changing and they are in search of new host rocks with ore potential. In the present attempt youngest flood basalts in the vicinity of the paleo fissures are studied along with their associated rock. The samples collected from selective areas with structural control revealed that youngest flows have relatively higher potential. The content is also found to be varying with lithology. The volcanic braccia are rich in their Au content while the intrusive have high PGE content. Petrographic study of these rocks suggests that the pillow lava is rich along the border, while volcanic braccia suggest the agglomerate are relatively higher in their Au content.

Fluid inclusion study carried out on cogenetic transparent minerals like quartz, feldspars, pyroxenes, rutile and calcite, zeolite other sparry minerals of secondary nature do suggest that there is definitely role for CO₂ and other related gases released during the release of lava eruption. Pronounced necking of inclusions, decrepitated clusters and leakage of inclusion is more commonly exhibited by braccia there by suggest higher temperature and pressure regime of pulsatory eruptive lava flows.

Samples collected from the host rocks are subjected to liberation by grinding to 100 mesh size were concentrated by gigging and panning followed by magnetic separation and heavy concentrate were stored in plastic tin. This powdery ore was processed for fire assay study in Hutti gold mines. The results obtained are very encouraging out of the ten analyses all confirmed presence of gold. Study on the bulk sample can definitely help to assess the grade of the ore. The photographic evidences obtained during field and laboratory study in support my claim will be discussed.

Thus the field and laboratory, study confirms the vital role played by volatiles during the deposition of Au and PGE minerals in the suitable hosts and their by emphasize more detail study on ore mineral potential of continental flood basalts from the similar area.