Structure and Stratigraphy of the Makapa Project

Kumar Persaud

The Makapa-Kuribrong Shear Zone (MKSZ) is interpreted as a regional scale lithospheric structure of the Guiana Shield. This NW-SE trending structure is proximal to several gold deposits within Guyana-- the largest being Omai (3.5 Moz). The Makapa project area is underlain by a ~60km segment of the MKSZ north of the Kuribrong river and ~35km west of the Omai deposit. The project area is also located ~15km southwest of the Karouni mine, where the geologic framework is described in detail by Tedeschi (2018a).

Stratigraphy

The geological framework established comprise of strained and foliated supracrustal rocks. These include.

- Mafic Volcanic
- Intermediate volcanics (Andesite)
- Intermediate volcaniclastic
- Interbedded Sandstone and Siltstone
- Interbedded Siltstones and Mudstones
- Late Dolerite Dikes

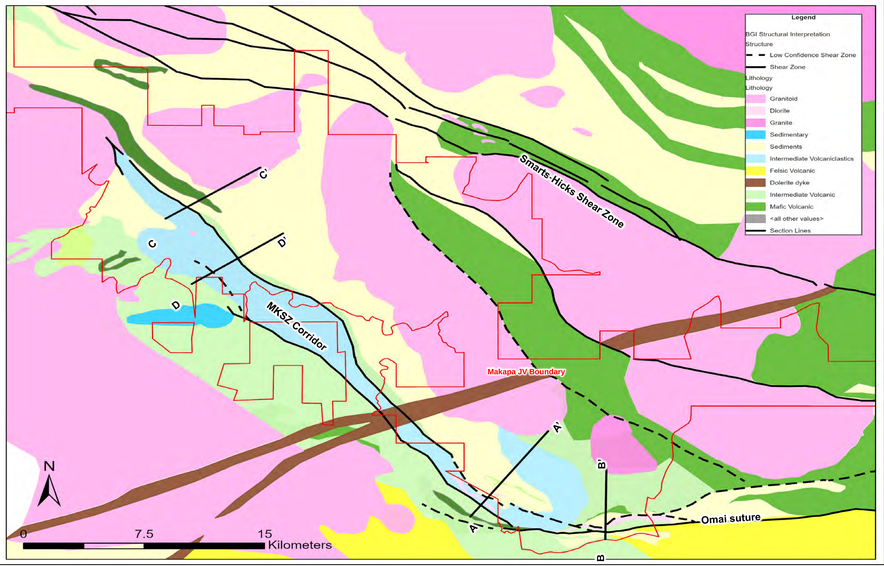


Figure 1. Geologic plan view map of the Makapa project area.

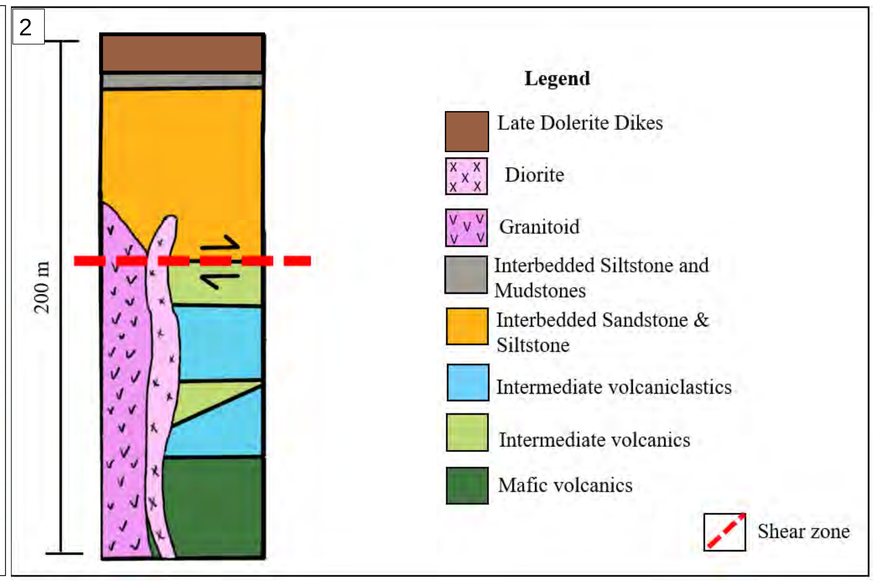


Figure 2. Stratigraphic column of the Makapa project area.

Cross Sectional Interpretation

- Section A-A' (figure 3a) is drawn in the NW-SE direction, perpendicular to the dominant structural fabrics. From southwest an intermediate volcanic package is present with NW trending planar fabrics steeply dipping to the NE. The contact between this package and a fragmental intermediate volcaniclastic is characterized by a low confidence shear zone with a pre-syn diorite body stitching along this structure. A volcaniclastic-metasediments-volcaniclastic package continuing to the NW is interpreted as a regional synform similar to the Karouni synform describe by Tedeschi (2018a).
- Section B-B' (figure 3b) is drawn N-S where the NW trending MKSZ and the E-W trending Omai suture intersect. The stratigraphy adjacent to the Omai suture is highly attenuated with a narrow, deformed diorite intrusion along the shear trending E-W, parallel to the structure. Schistose siltstone is in contact with the intermediate volcanics towards the ??. Stratigraphy may be different in this area since no fragmental intermediate volcaniclastic rocks were observed north of the Omai suture.

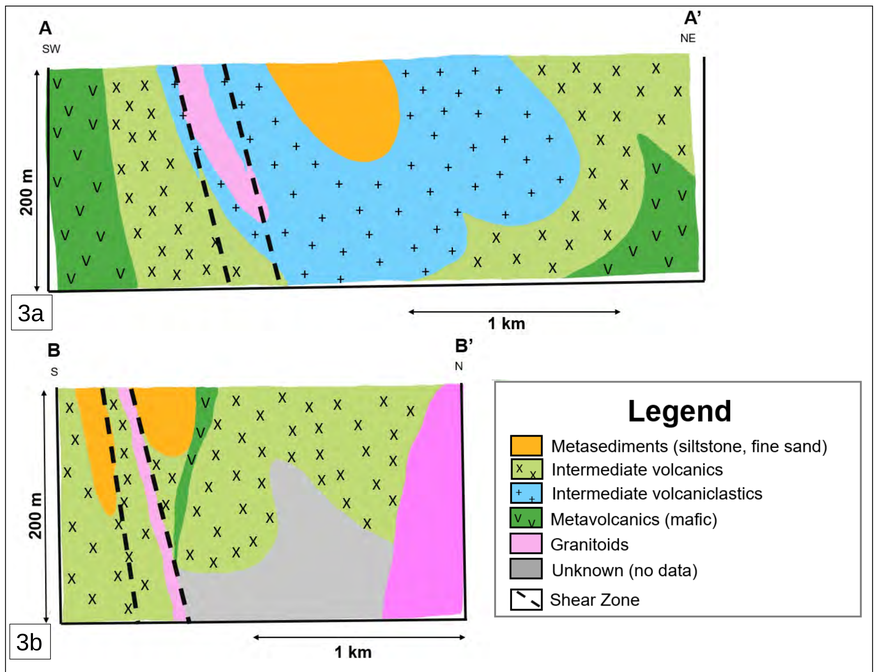
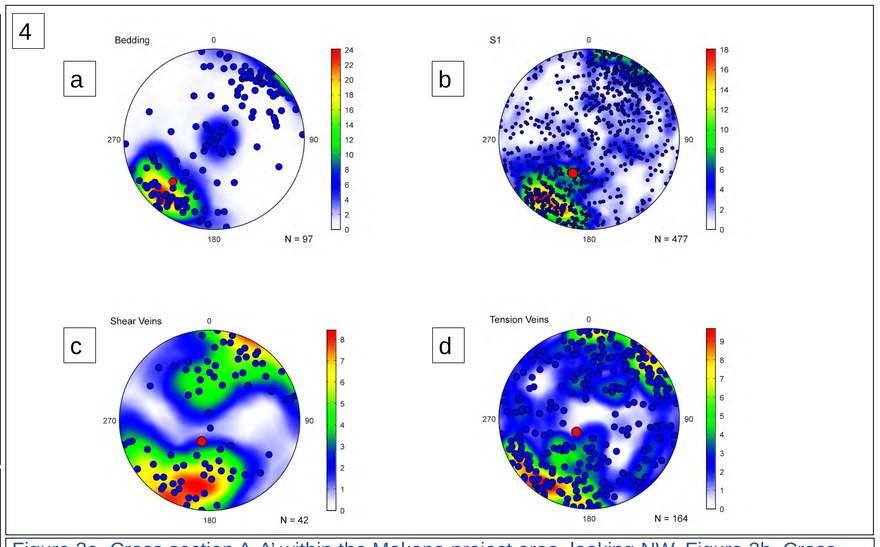


Figure 3a. Cross section A-A' within the Makapa project area, looking NW. Figure 3b. Cross section B-B' within the Makapa project area, looking west. Figure 4. Stereo plots of the structures in the Makapa Project area. 4a. Bedding. 4b. Foliations. 4c. Shear veins 4d. Tension veins.

Structures

- Field observations suggest that the Makapa project area underwent multiple phases of deformation. Bedding and foliations are predominantly NW-SE dipping moderately to steeply to the NE. These fabrics are related to the D1a regional deformation (Tedeschi 2018a) and the development of NW-SE oriented isoclinal folds. In the south Potaro, a secondary fabric trending E-W and dipping steeply to the north and south is evident where the projection of the interpreted Omai suture lies.
- Vein orientations also highlight the polyphase deformation of the area with three principal orientations. NW-SE veins (shear veins), NE and W-striking veins (dominantly tension veins).



References

Tedeschi, M., Hagemann, S.G., and Davis, J., 2018a, The Karouni Gold Deposit, Guyana, South America: Part I Stratigraphic Setting and Structural Controls on Mineralization: Economic Geology, v. 113.
Voicu, G., Bardoux, M., Jébrak, M., and Crépeau, R., 1999, Structural, mineralogical, and geochemical studies of the Paleoproterozoic Omai gold deposit, Guyana: Economic Geology, v. 94.
Bardoux, M., Moroney, M., and Robert, F., 2018. Gold mineralization in the Guiana Shield, Guiana and Suriname, South America: a field trip to the 14th biennial Society for Geology Applied to Mineral Deposits (SGA) meeting; Geological Survey of Canada, Open File 8351, 28 p.