

Geology, mineralization and mining at Tekka East, Perak

TEH GUAN HOE

Geology Department, University of Malaya, 50603 Kuala Lumpur

The present tin mining activities in the Tekka area, NE of Gopeng, is in the valleys and hill slopes east and SE of Tekka Hill. At a time when the tin price is still very low, it is heartening to see Merapoh Mines Sdn. Bhd. actively operating in the area.

The dry method of mining is carried out in the mineralized zone which is in weathered, hydrothermally altered granite.

The mineralized veins, on the average, strike in the 270°–320° direction and dip 60°–80° to the NE in the host rock which is a coarse-grained porphyritic biotite granite of the Main Range.

The mineralogy of the main veins encountered in the present mining area include:

1. Quartz-wolframite-tourmaline-cassiterite vein
2. Quartz-muscovite-fluorite
3. Quartz-tourmaline-cassiterite-sulphide
4. Quartz-tourmaline-cassiterite
5. quartz-tourmaline veins
6. Quartz vein

Mineralization in the Tekka area is xenothermal. The minerals encountered in the veins at Tekka East include cassiterite, wolframite, arsenopyrite, pyrite, stannite, fluorite, tourmaline, muscovite, lepidolite, other minor sulphides, and quartz.

Some of the more prominent veins are about 5 mm to 70 cm wide and can be traced to be about 100–200 meters in length. The alteration zones range from 20–30 cm. It is the overlapping of these alteration zones that have made the host granite weak and easily susceptible to weathering. It is these weathered soft, *in-situ* granite which is easily scrapped by excavators that are loaded on to dumpers to be further broken up by monitors.

The mine has fully exploited the soft nature of the weathered mineralised zones and the slopes available in the method and design of the mining techniques. After being broken up by powerful jets of monitors, the ore material is sucked up and sized and enters a palong. The tin-containing material is then passed through primary and secondary jigs before further beneficiation by the willoughby box and lanchute box. Unwanted sulphides are removed by floatation. A high-tension separator is also used to separate out the ilmenite, struverite, monazite, xenotime and other magnetic minerals.