The preliminary evaluation and origin of the Sungei Keneras kaolin deposit, Gua Musang, Kelantan

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The Sungei Keneras clay deposit is located on a 2 km long hill trending NNW-SSE at about the 279 km point of the Gua Musang-Kuala Lumpur highway. Geologically, the area which surrounds the kaolin deposit exposed metasediments of the Gua Musang Formation which is believed to be deposited mainly from Middle Lower Permian to Lower Middle Triassic. The folded sediments were then intruded by granite and related rocks in Upper Triassic.

The original rock from which the clay deposit was derived is identified as a muscovite-bearing aplite which had been hydrothermally altered (mainly kaolinization and some sericitization) to form the residual kaolin deposit. Twenty-six samples of the clay deposits from 17 pits were sampled and 13 samples from 10 locations were analyzed for its particle size and total mineralogical content. Some of the raw clay samples were "processed" in the laboratory and the particle size and total mineralogical content were also determined for the processed kaolin clay. The evaluation of the kaolin deposit was made by comparing the properties of the raw and processed clay from the Sg. Keneras area with those from Associated Kaolin Industries Berhad, Bidor, Perak. The Sg. Keneras clay shows a relatively good distribution of the particle size and is comparable to the Bidor raw clay. In terms of mineralogy, the clay deposit from Sg. Keneras shows lower contents of kaolinite and a higher content of amorphous clay and feldspars.

The processed clay using a number of selected samples from the Sg. Keneras area shows whiteness (81.2%) and brightness (80.3%) which exceeds the requirements for kaolin clay which are used as paper and rubber grade fillers, general filler and in the paint industry. However, the processed clay from Keneras shows less kaolin content then the commercial grades produced by the Associated Kaolin Industries Berhad. Overall, the distribution of both grain size and mineral contents in the Sg. Keneras deposit are uneven throughout the kaolinized area sampled though a selected area of substantial size (100 m x 400 m) appears to be suitable for commercial exploitation. Further detailed testing involving taking samples from deeper levels using Bangka drilling is suggested. Processing using settling tank or special bucket to obtain a large enough sample for testing the market is suggested.

Various evidences including topographic location, mineralogical composition, confinement of the kaolinized area to the muscovite aplite, lack of Fe-oxide staining and transition from soft kaolinized to harder sericitized aplite indicate that the Sg. Keneras kaolin deposit originated from hypogene process.

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