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**ENGINEERING GEOLOGICAL INVESTIGATION ON KARAMBUNAI-LOK  
BUNUQ LANDSLIDES, KOTA KINABALU, SABAH**

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**ABSTRACT**

This paper describes landslide occurrences in debris materials, together with its engineering geological and geotechnical setting. The predictions from conventional geotechnical slope stability analyses, taking into account topography, hydrological, geotechnical and engineering geological effects, are compared with the observed pattern of instability. Physical and mechanical properties of eight (8) soil samples indicated that the failure materials mainly consist of poorly graded materials of sandy clay soils and characterized by low to intermediate plasticity, containing of normal clay (0.42 to 0.95), very high degree of swelling (5.63 to 10.35), variable low to high water content (11.95 % to 19.92 %), specific gravity ranges from 2.60 to 2.68, low permeability ( $6.68 \times 10^{-4}$  to  $1.52 \times 10^{-4}$  cm/s), friction angle ( $\phi$ ) ranges from  $18.50^\circ$  to  $34.20^\circ$  and cohesion (C) ranges from  $3.36 \text{ kN/m}^2$  to  $19.50 \text{ kN/m}^2$  with very soft to soft of undrained shear strength ( $9.47 \text{ kN/m}^2$  to  $32.30 \text{ kN/m}^2$ ). Geotechnical limit equilibrium stability analyses of entire slopes are rarely able to predict the smaller-scale initiation events leading to landslide occurrences, because these are controlled by local topography, water runoff and groundwater conditions, weathered materials and engineering geological setting. Slope stability analysis shows that the factor of safety value ranges from 0.805 to 0.817 (unstable). It is concluded that the failures was debris flow and resulted from a combination of factors.