

## **Using remote sensing and geographical information system (GIS) technology for mapping the groundwater potential in Kota Kinabalu, Sabah, Malaysia**

### **Abstract**

The studies that were conducted in the vicinity of Kota Kinabalu, Sabah, Malaysia consisted of five stages, namely collection and provision of basic data, satellite data analysis, developing a database space, spatial analysis and integration of data and modelling. In this study, various parameters such as the geology, drainage, topography, slope steepness, rainfall, sand and clay ratio and lineament were collected, processed, analyzed, integrated and modeled using the remote sensing and GIS techniques for producing the thematic maps. By using the ERDAS IMAGINE 8.4 and ILWIS 3.4 software each polygon in the thematic maps that had been produced was given an appropriate weight value (weightage) according to its influence in the production of groundwater. Means of giving weightage is modified from the values used by Krishnamurthy et al. (1997) which is the lowest value is ten (10) and the highest value is fifty (50). The overlay or integration process performed to all the thematic maps using the Index Overlay Method to produce the final result. Finally, the groundwater potential map of the study area was produced. The potential map was further classified into five categories or zones namely very high, high, moderate, low and very low.