

**DIFFERENTIATE QUARTZITE AND VEIN  
QUARTZ FROM THE BEDROCK BY  
RESISTIVITY METHOD**

A dissertation submitted to the  
Faculty of Science & Technology  
UvaWellassa University

In partial fulfillment of the requirements for the award of the  
Degree of Bachelor of Science

By

**WEERASEKARA MUDIYANSELAGE MUDITHA  
ANURADHA WEERASEKARA**

**Mineral Resources and Technology Degree Program  
UvaWellassa University, Sri Lanka**

**2013**

## **Abstract**

Previous studies reveals that the resistivity response for vein quartz is unique, reflects a flat nature of 1D resistivity curves in Vertical Electrical Sounding (VES), though both the bedrock and vein quartz are in same dynamic range of resistivity values. Almost same characters are observed in quartzite as similar to the vein quartz and this study intended to use the resistivity response as a tool to identify quartzite from other types of bedrock(s).

Resistivity data acquired during a survey in Mahakirula survey site, Kahalla-Pallekale area as a preliminary study of irrigation scheme, was considered for this analysis. Over 12 VES soundings were conducted at Mahakirula site with 200m line extent and over 40m depth detection limit. The outcome of the resistivity survey has been confirmed via drilling and quartzite appeared as the bedrock at many locations.

The 1D Vertical Electrical Sounding (VES) curves that of quartzite terrain(s) in Mahakirula reflect a flat response where quartzite beds are present. Similar 1D response is displays for quartzite as of the vein quartz and differs from the bedrocks.

Therefore the same resistivity technique procedure which used to identify the Vein Quartz from the bedrock can apply to the Quartzite to differentiate from its associated bed rock.

**Key words** – 1D Resistivity, Vein quartz, Quartzite, Vertical Electrical Sounding (VES)