

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/322020408>

GEOLOGICAL AND GEOPHYSICAL INVESTIGATION AT THE CONSTRUCTION SITE OF THE KALUGANGA MAIN DAM, SRI LANKA

Conference Paper · February 2017

CITATIONS

2

READS

410

2 authors:



Jagath Gunatilake

University of Peradeniya

207 PUBLICATIONS 409 CITATIONS

SEE PROFILE



H.M.T.G.. Amarasooriya Pitawala

University of Peradeniya

274 PUBLICATIONS 1,358 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Assessment of Mineral Alteration and Antimicrobial Potential of Rasashastra Formulations [View project](#)



Engineering Geological, Hydrogeological, and Geotechnical investigations for construction of 4 km long Bypass Tunnel for Kandy to divert Traffic from Suduhumpola to Thennekumbura via Ampitiya (for RDA, with CECB) [View project](#)

GEOLOGICAL AND GEOPHYSICAL INVESTIGATION AT THE CONSTRUCTION SITE OF THE KALUGANGA MAIN DAM, SRI LANKA

Jayanath M. G. S.^{1*}, Jagath Gunatilake^{1,2} and Pitawala, H. M. T. G. A.^{1,2}

¹*Postgraduate Institute of Science, University of Peradeniya, Sri Lanka*

²*Department of Geology, Faculty of Science, University of Peradeniya, Sri Lanka*

**Corresponding Author Email: sameerajayanath5@gmail.com*

Engineering geological condition is important considering the water tightness and the stability of the dam foundation. In the history of dam construction, many projects have faced several cases of leakage or dam failure incidents. Therefore, detailed investigations are required to determine the water tightness and the stability of the dam foundations.

Geotechnical and geophysical investigations were carried out in the main dam area of Kaluganga reservoir project to understand the subsurface engineering geological condition. Under the present study, geological mapping was performed in the core trench of the right abutment of the main dam. Geological sections were prepared using the data from borehole logging and geological mapping. Furthermore, 2D resistivity survey data from CECB project reports in 2015 were used to visualize possible weak zones in the dam site.

The results based on geological investigation showed distribution of the calc gneiss band with weak areas in the dam foundation and right abutment. Moreover, the resistivity images revealed an occurrences of a weak rock band on the left bank and a weak zone at the downstream of the dam.

However, these weak zones may not be affected much on the water tightness with respect to their locations.
