

## Integrated Subsurface Analysis of Thickness and Density for Liquefaction Hazard: Case Study of South Cilacap Region, Indonesia.

<b>Title</b>	Integrated Subsurface Analysis of Thickness and Density for Liquefaction Hazard: Case Study of South Cilacap Region, Indonesia.
<b>Author Order</b>	5 of 6
<b>Accreditation</b>	2
<b>Abstract</b>	<p>The thickness of the liquefiable layer can be the factor inducing liquefaction hazard, apart from seismicity. Several studies have been conducted to predict the possibility of the liquefiable layer based on the filed sampling. However, a detailed investigation of the subsurface interpretation has not been defined, in particular the thickness estimation of the liquefiable layer. This study is carried out in south Cilacap area where potential liquefaction is exists due to the earthquake history data and near surface condition. The aim of this study is to investigate the physical properties and thickness distribution using GGMplus gravity data and resistivity data. This research is conducted by spectrum analysis of gravity model and 2D resistivity model . This study's main results is by performing the residual gravity anomaly with the associated SRTM/DEM data to define the subsurface physical distribution and structural orientation of the area. Residual gravity anomaly is also separated through the low pass filter in order to have robust interpretation. The residual anomaly indicates that the area has identical structural pattern with geological and SRTM map. The results show a pattern of high gravity index in the northeast area of the study having range of 70 – 115 MGal gravity index, associated with the volcanic breccia, and a low gravity profile with less than 65 in the southwest, associated with the alluvial and water table dominated distribution. The thickness of Alluvial is determined by resistivity model with H1 at a range of 3 meters and H2 at a range of 4 m. This research is included in the potential liquefaction category with the potential for a large earthquake.</p>
<b>Publisher Name</b>	UIR PRESS
<b>Publish Date</b>	2021-03-29
<b>Publish Year</b>	2021
<b>Doi</b>	DOI: 10.25299/jgeet.2021.6.1.5892
<b>Citation</b>	
<b>Source</b>	Journal of Geoscience, Engineering, Environment, and Technology
<b>Source Issue</b>	Vol. 6 No. 1 (2021): JGEET Vol 06 No 01 : March (2021)
<b>Source Page</b>	58 - 66
<b>Url</b>	<a href="https://journal.uir.ac.id/index.php/JGEET/article/view/5892/3127">https://journal.uir.ac.id/index.php/JGEET/article/view/5892/3127</a>
<b>Author</b>	Dr SACHRUL ISWAHYUDI, S.T, M.T