


Comparative Study of Potential Liquefaction of Three Selected Locations Along the Pasig City Segment of the Valley Fault System

A Research Presented to Faculty of Civil Engineering  
College of Engineering, Architecture, and Technology  
De La Salle University- Dasmariñas  
Dasmariñas City

The seal of De La Salle University - Dasmariñas is a circular emblem with a scalloped border. It features a central shield with a red triangle at the top, a white field with a blue and red cross, and a green field with a white star. Below the shield is an open book. The shield is flanked by two green laurel branches. The text "AKLATANG EMILIO AGUINALDO - INFORMATION RESOURCE CENTER" is written in a circular path around the top of the seal, and "De La Salle University - Dasmariñas, Cavite, Philippines" is written around the bottom. The seal is semi-transparent and serves as a background for the text.

In Partial Fulfillment of Requirements for the Degree  
Bachelor of Science in Civil Engineering

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CEE51

October 2011

## **Abstract**

A seismic – induced liquefaction is a complex ground failure phenomenon observed when saturated loose sand deposits loss its shear strength. It may be quantified as to the damage that it causes to the built infrastructures within the vicinity.

This study was conducted to determine the potential liquefaction of three specific locations along the Pasig City segment of the Valley Fault System in Barangay Kapitolyo, Manggahan and Ugong and correlate it with their respective soil suitability.

The study employed secondary data from geotechnical firms, DOST – PHIVOLCS and the local government unit of Pasig City.

The results were assessed through the use of an excel program devised by the researchers based on a simplified procedure by Seed and Idriss (1997), and Das (1995). The factor of safety due to liquefaction (FS) at specific soil conditions was computed using this program and proved that the chosen location in barangay Ugong is the most susceptible to liquefaction among the three chosen locations. The mitigation measures for the soil and/or the type of foundations to be applied was considered and pile foundations are recommended in the locations in barangay Manggahan and Ugong. Shallow foundations are, on the other hand, safe in barangay Kapitolyo.