

Republic of the Philippines
Department of Education
REGION IV-A CALABARZON





06 September 2022

Regional Memorandum

**LIQUEFACTION HAZARD ASSESSMENT RESULT FOR
SELECTED SCHOOLS IN REGION IV-A CALABARZON**

To: **Schools Division Superintendents
Cavite, Cavite City, and General Trias City**

1. This is with reference to the project called **“Liquefaction Hazard Assessment for Resilient Schools in GMMMA: A Liquefaction Probabilistic Model using Non-Invasive Geophysical Techniques and Limited Probe Hole”** which was led by the Philippines Institute of Volcanology and Seismology (PHIVOLCS) in cooperation with the Department of Education (Deped), Department of Science and Technology and Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD) that aims to determine the liquefaction potential and adopt measures to mitigate the impact and increase the resiliency of the school sites visited.
2. The project also capacitated the selected Department of Education Engineers on the use of new equipment and applications to determine the liquefaction potential and susceptibility of a certain area.
3. Attached herewith is “Annex A” which provides the results of the Liquefaction Assessment conducted, being endorsed to the concerned personnel of Schools Division Offices for information and guidance.
4. For further inquiries please email at essd.calabarzo@deped.gov.ph
5. Immediate dissemination of this Memorandum is desired.


ATTY. ALBERTO T. ESCOBARTE, CESO II
Regional Director 

essd/emz



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"Annex A"



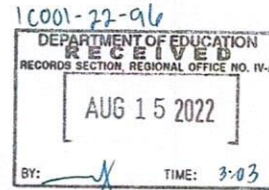
REPUBLIC OF THE PHILIPPINES
Department of Education
EDUCATION FACILITIES DIVISION
 5th Floor Mabini Bldg., DepED Complex, Meralco Avenue, Pasig City



Office of the Chief

09 August 2022

ATTY. ALBERTO T. ESCOBARTE, CESO II
 Assistant Secretary
 Office-in-Charge, Office of the Regional Director
 Region IV-A (Calabarzon)
 This Department



Dear **Atty. Escobarte**:

In line with the project titled: *Liquefaction Hazard Assessment for Resilient Schools in GMMA: A Liquefaction Probabilistic Model using Non-Invasive Geophysical Techniques and Limited Probe Hole* that was led by the Philippine Institute of Volcanology and Seismology (PHIVOLCS) in cooperation with the Department of Education (DepEd), funded by the Department of Science and Technology (DOST) and monitored by the Philippine Council for Industry, Energy, and Emerging Technology Research and Development (PCIEERD).

The project was conducted from the 1st quarter of 2020 and concluded last June of 2022, the activity aims to determine the liquefaction potential and adopt measures to mitigate the impact and increase the resiliency of the school sites visited.

In addition, part of the project is the capacity building of the project proponents' technical personnel on the use of new methods in Liquefaction Assessment using Geophysical Techniques. Selected DepEd Engineers were trained on the use of new equipment and applications to determine the liquefaction potential and susceptibility of a certain area. Results of the assessment conducted on the selected sites were also turned-over (printed and soft files) during the closing program of the said activity.

Hence, this Office formally endorses the printed copies of the results of the Liquefaction Assessment conducted for dissemination to the concerned Schools Division Offices that can be used as reference in conducting pre-engineering studies for future projects.

Attached is the summary of the results for reference.

Thank you and best regards.

Very truly yours,


ENGR. ANNABELLE R. PANGAN
 Chief, EFD-AS

Province of Cavite

Name of School	Ground Water Level [m]	Peak Ground Acceleration [g]	Shear Strain [%]	Liquefaction Potential	Liquefaction Severity
Sineguelasan ES	0.9	0.46	0.07-0.10 (High)	Very High	Moderate to Severe (8-24 cm of probable settlement)
*Cavite NHS	4.98	0.42	0.12-0.23 (High)	Very High	Minor to Severe (55-89 cm of probable settlement)
Aguinaldo ES	1.60	0.43	0.04-0.07 (High)	Low to Very High	Minor to Moderate (2-17 cm of probable settlement)
Bagbag ES/NHS	0.90	0.39	0.01-0.02 (Low)	Very Low	Little to no expression (0 cm of probable settlement)
Ladislao Diwa ES	1.10	0.41	0.07-0.12 (High)	Very High	Little to Severe (42-72 cm of probable settlement)
Tanza Natl HS	1.10	0.38	0.01-0.02 (Low)	Low	Little to Minor (1-2 cm of probable settlement)
Balsahan ES	1.30	0.30	0.01-0.06 (High)	Low to High	Little to Major (5-17 cm of probable settlement)
Halayhay ES	1.0	0.30	0.02 (Low)	Very Low to Low	Little to Minor (1 cm of probable settlement)
Ternate CES	2.13	0.27	0.01-0.02 (Low)	Very Low	Little to No Expression (No probable settlement)
Ternate NHS	2.08	0.27	0.01-0.02 (Low)	Low	Little to No Expression (0-2.45 cm of probable settlement)
Ternate West NHS	2.98	0.27	0.02-0.14 (Low to High)	SDS N-value method- High Shear wave velocity method- Very Low	Moderate (0-34.12 cm of probable settlement)

Pre-identified Non-liquefiable sites

Name of School	Ground Water Level [m]	Peak Ground Acceleration [g]	Shear Strain [%]	Liquefaction Potential	Liquefaction Severity
Quezon City SHS	3.73	0.52	0.0-0.01 (Low)	Very Low	No Expression (0 cm of probable settlement)
Carlos Albert HS	1.20	0.53	0-0.07 (Low)	High on some areas	Little to Moderate (3-7 cm of probable settlement)
Sapang Palay NHS	7	0.43	0-0.035 (Low)	Very Low	Little to no expression (0 cm of probable settlement)
Norzagaray ES	2.03	0.35	0.0-0.017 (Low)	Very Low	No expression (0 cm of probable settlement)
Punta ES	1	0.30	0.0 (Low)	Very Low	Little to no expression (0 cm of probable settlement)
Gen. Trias MES	1.50	0.30	0.01-0.07 (Low)	Very Low	No Expression (0 cm of probable settlement)

