

# LETTER TO EDITOR

## The Northwest Sabah trough is currently inactive

### Comment on Two Recent Articles in Geological Society of Malaysia Publications

H.D. Tjia

Email: hdtamp@streamyx.com

Two recent articles by Mustaffa Kamal Shuib (2009) and Kessler (2009) in the Bulletin No. 55 and Warta Geologi Volume 35 (3) reproduced two separate figures attributed to Simons et al. 2007. The “Northwest Borneo Trench” is shown to possess active reverse faulting on its Sabah side. When the digital internet article of Simons et al. became available, in early 2008\*, I wrote an email to the primary author noting that seismic sections of BGR (Bundesanstalt fuer Geowissenschaften und Rohstoffe, Hannover, Germany) across the “trench” do not show any disturbance for the essentially horizontal reflectors in the top most 0.6 second TWT of the “trench” fill. This is especially clear on the seismic line BGR86-06 (a copy is in the Petronas data archive). Furthermore, geoseismic sections across the NW Sabah Trough published by Hazebroek & Tan (1993, pp. 203-204) show similar undisturbed conditions of the upper trough-fill sequence.

The undisturbed top 0.6 s TWT sediment sequence on the Sabah side of the trough is estimated to represent “Pliocene to Recent” (basing on dated seismic sections published by Levell & Kasumajaya, 1985) and suggests strongly that no crustal movement had occurred during that period on the Sabah side of the trough. It is unlikely that movement had occurred since the seismic sections were shot in the early 1980s. Moreover, Simons et al. (and Kessler) tie up of the “NW Borneo Trench” with the West Baram Line is not supported by seismicity. The epicenter of an MW 5.2 earthquake on 1 May 2004 did occur and is consistent with left slip on the Tubau Wrench

fault, striking N-S and located more than 60 kilometres to the southwest of the West Baram Line (see Yan, A.S.W. Saim Suratman, Adam Liau et al. 2006).

\* *The email to W. Simons at Delft, The Netherlands, has yet to be replied to.*

### REFERENCES

- Hazebroek, H. P. & D.N.K. Tan 1993, Tertiary evolution of the NW Sabah continental margin, Geological Society of Malaysia Bulletin 33: 195-210.
- Kessler, F.L., 2009, The Baram Line in Sarawak: Comments on its anatomy, history and implications for potential non-conventional gas deposits. Warta Geologi 35 (3): 105-110.
- Mustaffa Kamal Shuib 2009, The recent Bukit Tinggi earthquakes and their relationship to major geological structures. Geological Society of Malaysia Bulletin 55: 67-72.
- Levell, B.K. & A. Kasumajaya 1985, Slumping of the Late Miocene shelf edge offshore West Sabah: A review of a turbidite basin edge. Geological Society of Malaysia Bulletin 18: 1-29.
- Simons, W.J.F., Vigny, C.S., S. Abu *et al.*, 2007, A decade of GPS measurements in S.E. Asia: Sundaland motion and boundaries. Journal of Geophysical Research, 112 B06024. Doi: 10.1029/2005JB0033868.
- Yan, A.S. W., Saim Suratman, A. Liau *et al.*, 2006, Study of the seismic and tsunami hazards and risks in Malaysia. Report on the Geological and seismotectonic information of Malaysia. Jabatan Mineral dan Geosains Malaysia: 49+ pp., including Seismotectonic Map of Malaysia, Third Edition, and appendices.