

PETROLEUM GEOLOGISCHE KRING

KONINKLIJK NEDERLANDS GEOLOGISCH EN MIJNBOUWKUNDIG GENOOTSCHAP



PGK

Secretary:	Frank van den Belt Panterra Geoconsultants BV Veerpolder 5, 2361KX Warmond	Treasurer:	Mat De Jong Berkenrodestraat 17 2012 LA Haarlem
Phone / Fax:	071-3019307 / 071-3010802	Phone / Fax:	023-5322645 / 023-5517044
E-mail:	secretary-pgk@panterra.nl	E-mail:	mat_de_jong@planet.nl
Venue:	PGK's monthly lectures are held at the KIVI building, Prinsessegracht 23, Den Haag. Drinks are served from 5 PM; the lecture starts at 6 PM.	Labels:	Last update April 2000.
Membership:	Please apply for membership by contacting the secretariat. Annual dues: Fl 30,-		
Accounts:	VSB Bank: 88 65 82 733 (PGK, Den Haag)	Postbank: 4074482 (PGK, Den Haag)	

JUNE NEWSLETTER

JUNE 21ST:

STRATIGRAPHY AND SEDIMENTOLOGY OF THE NIGER DELTA

by T. J. A. Reijers

Throughout the Cenozoic, until the Middle Miocene, the Niger Delta grew through pulses of sedimentation over an oceanward-dipping continental basement into the Gulf of Guinea; thereafter progradation took place over landward-dipping oceanic basement. A 12,000 m thick packet of sediments resulted which is overall regressive, offlapping and composed of three diachronous siliciclastic facies units: the deep-marine pro-delta Akata, the shallow-marine delta-front Agbada and the continental, delta-top Benin.

Regionally, sediment dispersal is controlled by marine transgressive-regressive events related to cyclic eustatic sea-level changes with different periods. Locally, differential subsidence influences sediment accumulation. Collectively, these controls resulted in eleven chronostratigraphically confined delta-wide megasequences with considerable internal lithological variation.

Sea-level cyclicities with different periods may be in or out of phase with each other and with local subsidence and interfere with each other. Thus they influence depositional processes. At the high inflection points of the long-term eustatic sea-level curve, floodings take place that result in delta-wide shale markers. At the low inflection points erosional channels are formed that are often associated, downdip, with turbidites in LST's. Compositionally, the megasequences contain regional transgressive claystone units (TST) followed by a range of heterogeneous fine-to-coarse progradational or aggradational siliciclastic (para)sequence sets formed during sea level highstand (HST).

An updated biostratigraphic scheme for the Niger Delta is presented. Also an updated sedimentation model is proposed, that takes into consideration local and delta-wide effects of sea level cyclicity and delta tectonics. Megasequences are formed over time intervals of ~5 Ma within individual arcuate megastructures that laterally linked into depobelts. The megasequences form the time stratigraphic frame of the delta and are the backbone for a new delta-wide lithostratigraphy as here proposed. Such a new lithostratigraphy is badly needed because the traditional lithostratigraphic subdivision of the Cenozoic Niger Delta section into three formations is insufficient for optimal stratigraphic application and the various informal subdivisions that have been proposed over time are inconsistent

SUMMER RECESS

There will be no PGK activities in July and August. The next newsletter will be distributed in the first week of September. We wish you a splendid summer and hope to see you in September!

EXCURSION THE HAGUE

During the PGK excursion in rainy The Hague there were a lot of questions about the sediment supply in the Dutch "Holocene" coastal area. It is worth reading the article: The

Holocene evolution of the barrier and back-barrier basins of Belgium and the Netherlands as a function of late Weichselian morphology, relative sea-level rise and sediment supply. D.J. Beets & A.J. F. van der Spek (Geologie en Mijnbouw/ Neth. Journ. of Geosc., v. 79, No. 1.) *Carel Kooter*

Thanks! Although a bit rainy, the excursion to The Hague has been a great success. PGK wishes to thank Carel Kooter (HRO) as our guide and Jan Steinz en Brouwers Tours for sponsoring bus transport.

FORTHCOMING PGK EVENTS

20 September: Seismic monitoring of CO2 injection in a Saline Aquifer, Rob Arts (NITG-TNO).

AUTUMN EXCURSION

This year's PGK 3-day excursion: **Carboniferous of the Berwick Coast area**, SE Scotland on 8, 9 and 10 September (from Friday afternoon until Monday early morning). Our guide: Dr. Andy Gardiner of the Petroleum Engineering Dept. of Heriot Watt University, UK. Any questions? Contact the secretary!

You can register for the excursion by e-mail (secretary-pgk@panterra.nl) or by returning the completed registration form to the secretariat. Please register soon!

Registration

Name

Adres

Postal code / City

Telephone number

OTHER EVENTS

June 22nd: KNGMG Symposium "Waddenzee, Aardwetenschappen en Maatschappij", Nationaal Natuurhistorisch Museum Naturalis, Leiden, aanvang 13.00 uur, toegang gratis; info en aanmelding: bureau@kngmg.nl of zie www.kngmg.nl/insrv_89.htm.

MEMBERSHIP NEWS

Mr. I Billing (PanTerra Geoconsultants) has applied for membership. If no objections have been received by the end of the coming meeting, he will automatically become a member of the PGK.

The following companies are warmly thanked for sponsoring the PGK in 2000:

*Argo Geological Consultants - Chevron USA Inc., The Neth. Branch - DSM Energie - Energie Beheer Nederland - Elf Petroland - Enres International - Fugro Inpark - Hogeschool Rotterdam, sectie aardrijkskunde - NAM - NITG-TNO
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