

# PETROLEUM GEOLOGISCHE KRING

KONINKLIJK NEDERLANDS GEOLOGISCH EN MIJNBOUWKUNDIG GENOOTSCHAP



PGK

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<b>Lecture location and timing:</b>	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.	<b>Labels:</b> Last update August 31, 1999	
<b>Membership:</b>	Please apply for membership by contacting the secretariat. Membership dues for 1998/1999: Fl 30,- Membership dues for 1997 and previous years: Fl 25,-		
<b>Accounts:</b>	VSB Bank: 88 65 82 733 (PGK, Den Haag)	Postbank: 4074482 (PGK, Den Haag)	

## SEPTEMBER 1999 NEWSLETTER

### PGK SEPTEMBER MEETING

The PGK guest speaker for **Wednesday, September 15<sup>th</sup>** will be Wim Swinkels. As a member of a Natural Gas Hydrates Team in Shell RTS, Rijswijk, Wim Swinkels has investigated options for producing gas from naturally occurring gas hydrates. The presentation "Natural gas hydrates - a fascinating source of energy" will discuss the occurrence and properties of natural gas hydrates, current research and exploratory activities and options to produce this hydrocarbon resource.

Gas hydrates are solid semi-crystalline structures consisting of gas and water molecules, which are stable under cold, slightly pressurised conditions. In the 1960's, the existence of naturally occurring gas hydrates was discovered by drillers in the Soviet Union. Since then extensive deposits of natural gas hydrates have been found in Arctic and offshore regions, seen on seismic lines and have occasionally been drilled, as e.g. in the Ocean Drilling Projects of the US Department of Energy.

One m<sup>3</sup> of methane hydrate can contain up to 180 m<sup>3</sup> of gas. The total amount of gas trapped in hydrate form below oceans and permafrost is estimated to be at least twice as much as all conventional fossil fuels (including coal). If this gas were economically producible, it would constitute an overwhelming potential energy resource.

Governmental organisations of various countries, including Japan, the USA, India and Canada, are funding considerable research into finding, quantifying and producing hydrate-associated gas. The oil industry has not yet significantly risen to this challenge and hydrate reservoirs are not yet produced commercially (with one possible exception in Siberia: the Messoyakha field). It can be expected that interest in natural gas hydrates will increase with foreseen requirements in the next century for large volumes of natural gas as a relatively clean hydrocarbon fuel and with increasing exploration and production operation experience in deepwater and Arctic drilling.

Production from gas hydrates and the gas trapped below it, poses an enormous challenge. The lack of a calibrated geological/geophysical/petrophysical rock model precludes the possibility of determining the vertical and lateral distribution of gas hydrate deposits as well as the potential volume of trapped gas. Well engineering issues include predicting and managing borehole stability in shallow (horizontal) wells drilled in hydrate containing sediments that will most likely be mixtures of unconsolidated sands or clays.

Potential development options include conventional depressurization, several types of thermal stimulation and chemical injection. It is expected that gas hydrate accumulations will behave differently than conventional reservoirs because of the heat consumed by dissociating hydrates. In addition, melting of the hydrate may reduce the integrity of the seal. Economics is a major issue, both

associated with the unconventional production methods, and with the transportation of the gas to the market.

### **REGISTER NOW FOR THE AUTUMN FIELD SEMINAR**

There are still places available for PGK's autumn field seminar to the Zechstein and Rotliegend outcrops around the Harz Mountains, Germany! Up till now some 25 PGK'ers have registered whereas we can accommodate 30 persons. Those that have sent their registrations for this field seminar by mail please note that unfortunately the P.O.Box number in the May and June Newsletters was printed incorrectly. If you did not receive a confirmation yet please contact the excursion secretary.

We will leave Den Haag by bus on Thursday September 23<sup>rd</sup> 4 PM and will return Sunday September 26<sup>th</sup>. The excursion fee covering bus, hotel and diner has been set at Dfl. 450,-. The PGK sponsors the remaining costs (estimated to be Dfl 50/person). Please make sure that your payment is transferred before September 9<sup>th</sup>. Those that have transferred more will receive a refund.

Please register by sending e-mail to [m.geluk@nitg.tno.nl](mailto:m.geluk@nitg.tno.nl) or by sending the following registration form to M. Geluk, excursion secretary, c/o NITG-TNO, P.O. Box 80015, 3508 TA Utrecht.

Name.....

Address.....

Phone.....E-mail:.....

Signature

### **OTHER FORTHCOMING PGK EVENTS**

**September 23-26** Field Seminar to the Rotliegend and Zechstein of the Harz and eastern Germany

**October 20** Speaker and topic to be announced in the October newsletter

### **OTHER EVENTS OF INTEREST TO PGK MEMBERS**

**September 16:** DPS: Production logging, Chris Ovens, Schlumberger, 12.00 sharp at Delft University of Technology, Faculty of Applied Earth Sciences, Mijnbouwstraat 120 Delft in the large meeting room (room 204)

### **MEMBER NEWS**

We have received applications for membership from **Mr. P. Timmermans**, **Mr. R. Veenhof** (Clyde Petroleum) and **Mr. H. Balder** (IPMS). If no objections are received by the end of the next meeting they will be automatically elected members of the society.

*The following companies are warmly thanked for sponsoring the PGK in 1999:*  
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