

PERSATUAN GEOLOGI MALAYSIA

WARTA GEOLOGI

NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MALAYSIA

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GEOLOGICAL
SOCIETY OF
MALAYSIA

PERSATUAN GEOLOGI MALAYSIA

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About the Society

The Society was founded in 1967 with the aim of promoting the advancement of earth sciences particularly in Malaysia and the Southeast Asian region.

The Society has a membership of about 600 earth scientists interested in Malaysia and other Southeast Asian regions. The membership is worldwide in distribution.

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CATATAN GEOLOGI

Geological Notes

The Tubau Lineament (Sarawak) is a strike-slip fault zone

H.D. TJIA¹, MOHD IDRUS ISMAIL² AND OTHMAN ALI MAHMUD²

¹Petronas Research & Scientific Services
Lots 3288 & 3289, Kawasan Institusi Bangi
43000 Kajang

²Petronas PRAD-PMU, Petronas Twin Towers
28th Floor Menara 1
50778 Kuala Lumpur

Striking a few degrees east of north, the Tubau Lineament consists of 25-km left-stepping, abrupt change of the Bukit Mersing Line (or northern boundary of the Upper Cretaceous-Paleocene Rajang Group), another 25-km of the linear Tubau river valley, and finally is traceable as the longer axis of the Ulu Suai Dome which adds ~30 km to the lineament (Fig. 1). The river lineament is indicated on the tectonic map of Liechti (1961) as Tubau "Trend". This map and the 1992 regional geological map published by the Geological Survey of Malaysia further show that the lineament and its distinct extension to the coast across Sarawak limits Neogene outcrops from appearing on the west side of the lineament. However, except for the features mentioned earlier, the Tuba Lineament does not appear to disturb the regional NE fold strikes in this part of Sarawak.

Our recent fieldwork included the Ulu Suai Dome area, which has been extensively cleared for oil palm cultivation. In the northern part of the dome, at geographical coordinates 03°23'25"N, 113°44'06"E, outcrops a north-striking fault zone that plots at the

exact extension of the Tubau Lineament (Fig. 1). The location is entirely within the Oligocene-Miocene Nyalau formation (Geological Survey of Malaysia, 1992). The exposed fault zone is ~5 metres wide and consists of relatively thin mylonite bands separating wider belts of brecciated clastics (Figs. 2a and 2b). The mylonite bands and slickensided fault planes strike north and dip vertically. Striations on the fault planes are subhorizontal, pitching 5 degrees north and are associated with large bruised steps and accretion spalls that indicate left slip (Fig. 3).

From our present knowledge, we suggest that the Tubau Lineament originated as a major left-lateral strike slip fault zone that was active in pre-Upper Miocene time, or up to the end of Cycle V (Mohd Idrus Ismail *et al.*, 1997). Sinistral displacement reached ~25 km and is now represented by the abrupt change of the Bukit Mersing Line near Belaga. That the upper Neogene formations are restricted to the east of the lineament seems to indicate later activity as a normal fault downthrowing to the east.

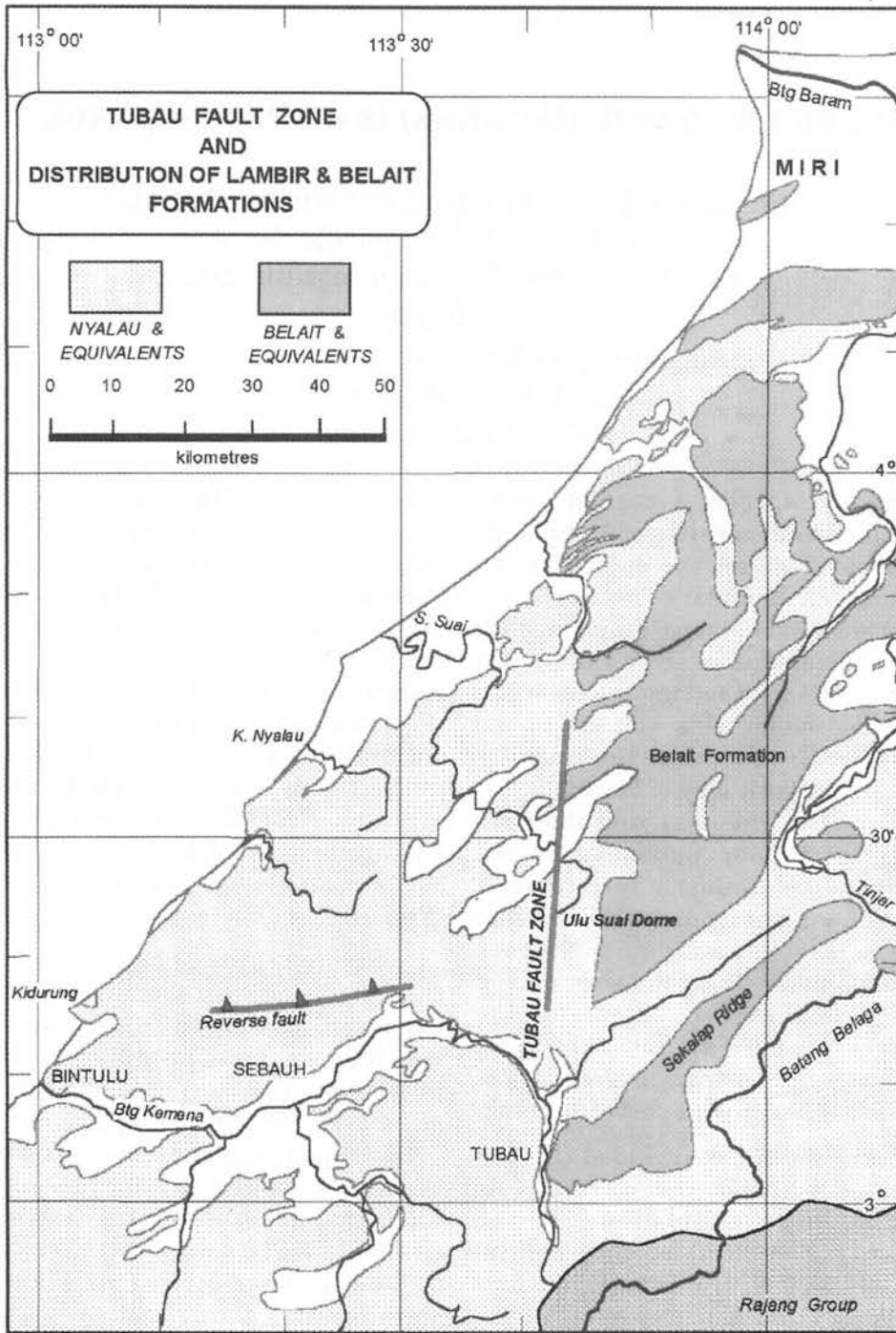


Figure 1. Tubau Fault zone in Sarawak and distribution of essentially Neogene and Paleogene formations. The base map is after the Geological Survey of Malaysia (1992). Recent fieldwork determined the faults.



Figure 2a. The Tubau Fault zone in the Ulu Suai Dome. View is towards south parallel to fault strike.

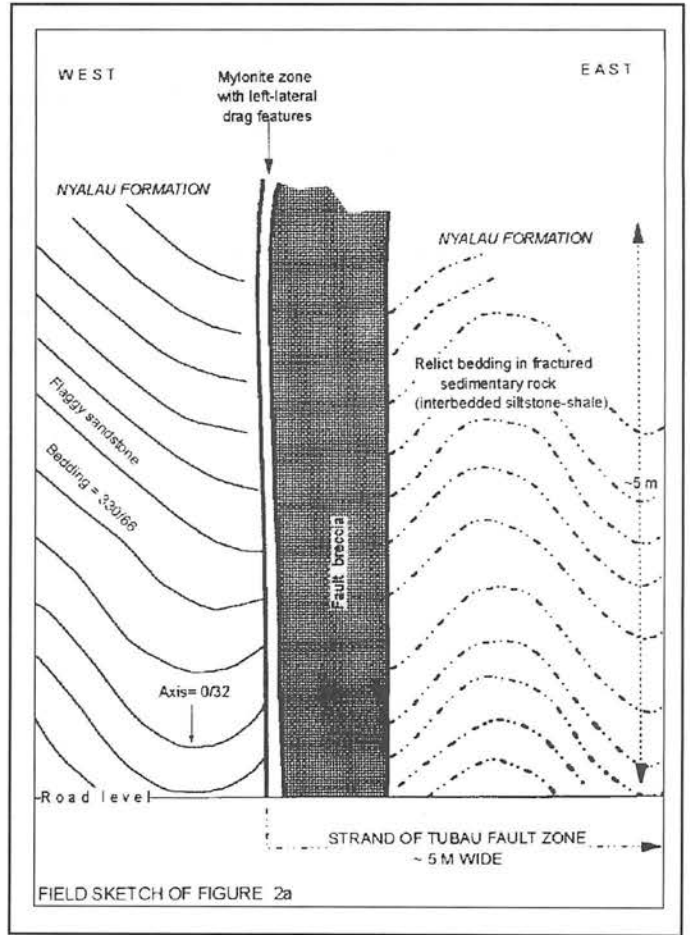


Figure 2b. Field sketch of the Tubau Fault zone in Figure 2a.



Figure 3. Slickensided fault plane in the Tubau Fault zone in the Ulu Suai Dome. Compass points in the direction of movement of the fault block on which the photographer stood. S = accretion spalls

REFERENCES

- GEOLOGICAL SURVEY OF MALAYSIA, 1992. Geological map of Sarawak, second edition. Jabatan Penyiasatan Kajibumi Malaysia, scale 1:500,000, 2 sheets.
- LIECHTI, P., 1961. Tectonic map of Sarawak Brunei and North Borneo. Geological Survey Department, British Territories in Borneo, Bulletin 3, Volume II (Portfolio), scale 1:1,000,000.
- MOHD IDRUS ISMAIL, OTHMAN ALI MAHMUD, AWALLUDIN HARUN AND H.D. TJIA, 1997. Hydrocarbon potential of the Tinjar Province, onshore Sarawak (abstract). Geological Society of Malaysia, Petroleum Geology Conference '97, Programme & abstracts of papers: 13-14.

Manuscript received 27 January 1998

CATATAN GEOLOGI

Geological Notes

The Tambun Tower — a photographic presentation

TAN BOON KONG
Department of Geology
Universiti Kebangsaan Malaysia
Bangi

Hidden amongst the limestone hills in the Tambun (Perak) area is a unique, slender limestone pinnacle named herein as the “Tambun Tower”. The series of photographs (Figs. 1–4) with accompanying captions record some short notes on the Tambun Tower, with the aim of generating some interest on this structure among the general geological community and especially those more inclined towards geo-tourism and conservation. Needless to say, this is yet another geologic feature worth preserving for geo-tourism purposes.

The Tambun Tower has in fact been studied recently with respect to its stability via-à-vis conservation versus risk of development around the tower in particular, and the various Tambun limestone hills in general, Tan (1998).

REFERENCE

TAN, B.K., 1998. Engineering geological survey of limestone cliffs in the Tambun area, Perak, Malaysia. Proceeding, 8th Congress of the International Association of Engineering Geology and the Environment (IAEG), Sept. 21–25, 1998, Vancouver, Canada.



Figure 1. Slab/plane failures along the vertical beds resulting in the gradual “peeling off” of the eastern flank of the Tambun Tower (camera viewing upwards from the saddle along the eastern side of the tower). Similar “peeling off” also occurs on the western flank of the tower.

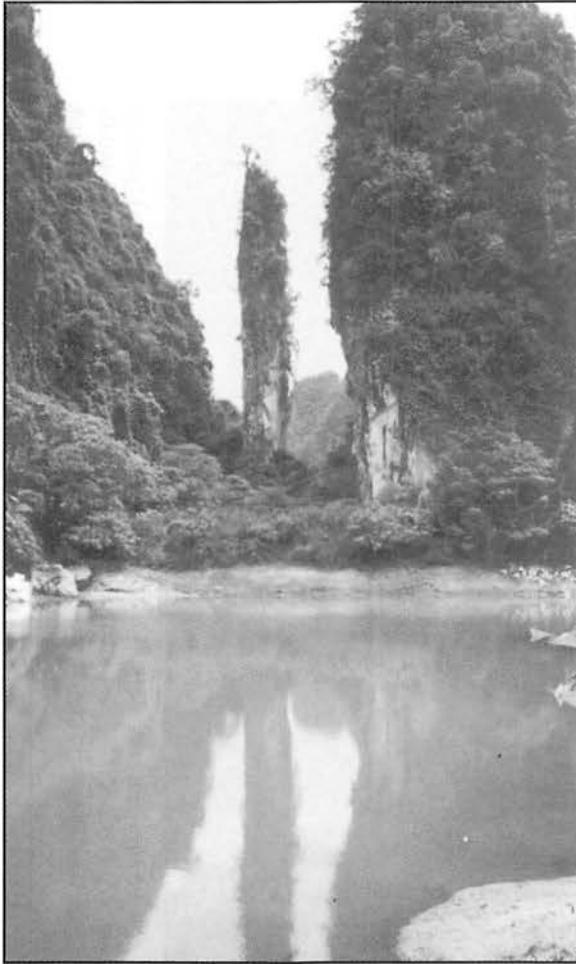


Figure 2. Scenic Tambun Tower with its reflection in the ex-mining pond (camera facing south). A low saddle joins the tower at its base to the limestone hill on its eastern side (left in photo), and essentially acts as a buttress supporting the tower. The tower is not linked to the hill on its western side (right in photo).

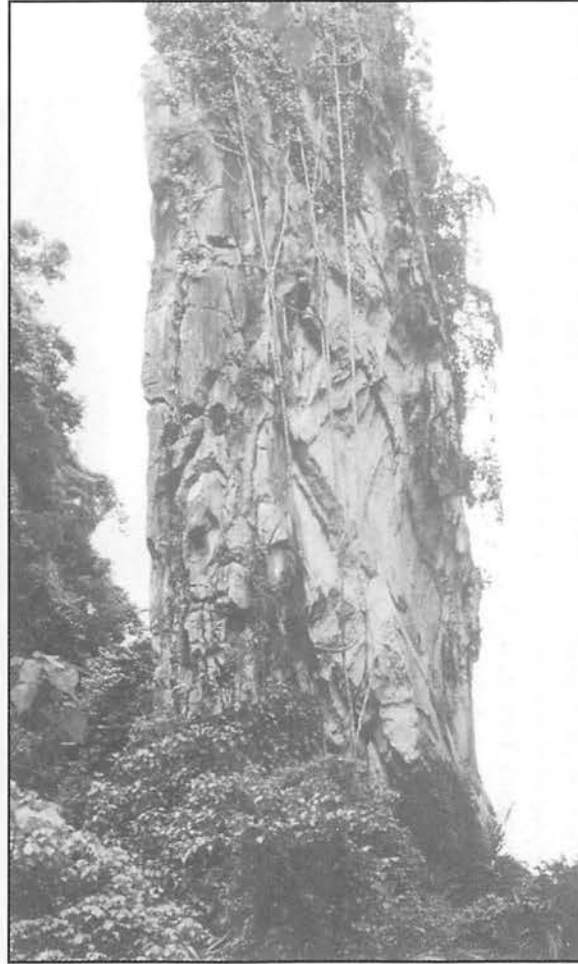


Figure 3. Close-up of the Tambun Tower showing ~ north-south trending vertical beds (cm-dm thickness). The tower consists of a stack of vertical beds like a stack of cards. The same ~ north-south trending vertical beds are also found in the saddle and the adjacent cliffs to the east and west of the Tambun Tower.

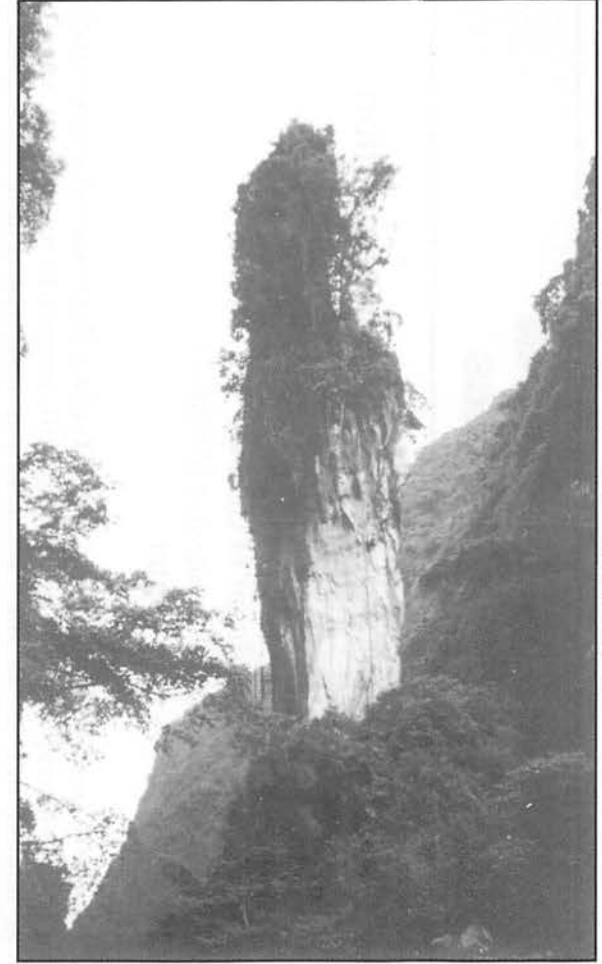


Figure 4. Close-up of the upper portion of Tambun Tower showing thinning at the tip resembling the nib of a fountain pen (camera facing north).

PERTEMUAN PERSATUAN Meetings of the Society

Ceramah Teknik (Technical Talk)

Formation evaluation applications of sonic measurements

ALAIN BRIE

Laporan (Report)

Mr. Alain Brie who is the Head of the Interpretation Product Line for Schlumberger K.K. in Japan gave the above talk on May 4th at 3.00 pm at the KL Hilton. The talk was jointly organised by the Geological Society of Malaysia and the Malaysian Society of Exploration Geophysicists. About 80 to 90 geologists, petrophysicists and geophysicists from various oil and service companies, and universities turned up for the talk covering the basic aspects and recent developments in sonic measurements and its applications. Such interesting was the talk that most participants were willing to stay until well after 5.00 pm for the speaker to finish up his presentation. Schlumberger Oilfield Services sponsored the refreshments and High Tea.

Mr. Alain Brie is an expert in log interpretation, specialises in the processing and interpretation of log measurements. He is also in rock mechanics and in the interpretation of resistivity, electromagnetic and nuclear measurements. During his 25 years career with Schlumberger, Mr. Brie previously occupied positions as interpretation development expert, research scientist, log analyst training manager, log analyst and field engineer. He is a graduate engineer from ENSMA in Poitiers, France, and a member of the SPLWA, SEG and SPE.

Abstrak (Abstract)

Sonic measurements traditionally used the compressional slowness for seismic time for depth calibration and porosity evaluation. Since the introduction of the dipole sonic tools, the shear measurement is available in different types of formations. Simultaneous use of the compressional and shear slownesses not only allows more detailed evaluation of the lithology and porosity, but can also be used to obtain gas content in shaly sands. A detailed evaluation provides dry frame properties for input to rock mechanics or for fluid substitution, and input to seismic AVO calibration and seismic modelling. Dipole shear measurements are directional and can resolve TIH anisotropy which is the anisotropy caused by horizontal stress imbalance or sub-vertical fractures. The fast shear azimuth is a good indicator of the maximum horizontal stress direction.

Low frequency Stoneley measurements have applications for fracture evaluation and permeability estimation. When combined with anisotropy directions, they identify fault zones which are highly productive in hard rocks. In the most recently developed application, seismic-type processing of compressional waveforms acquired at very long spacings provides images of discontinuities up to 30 ft away from the borehole. This has applications to image cap rocks in horizontal wells or fractures and promises to bridge the gap between sonic and seismic measurements.

CNL & Rokiah Esa

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Prepared by

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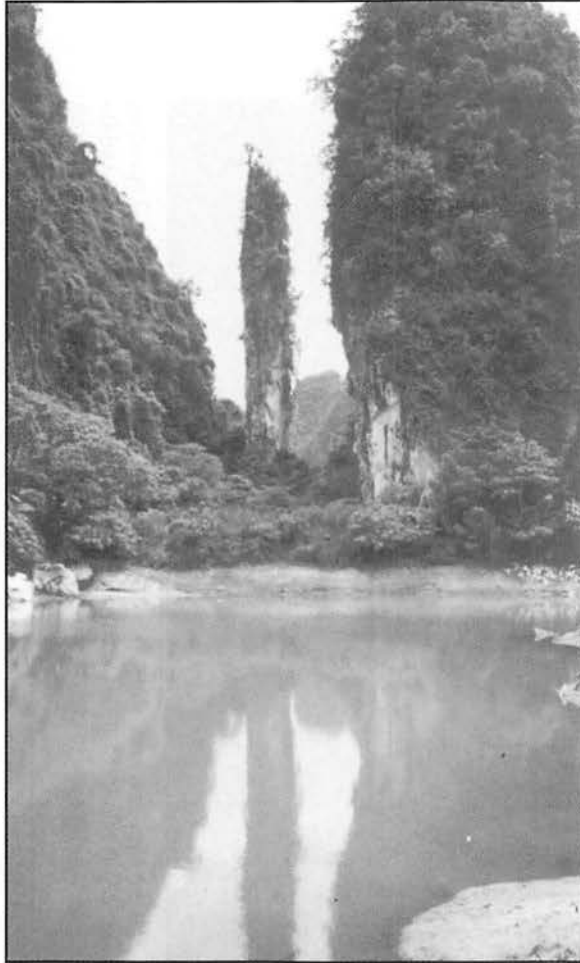


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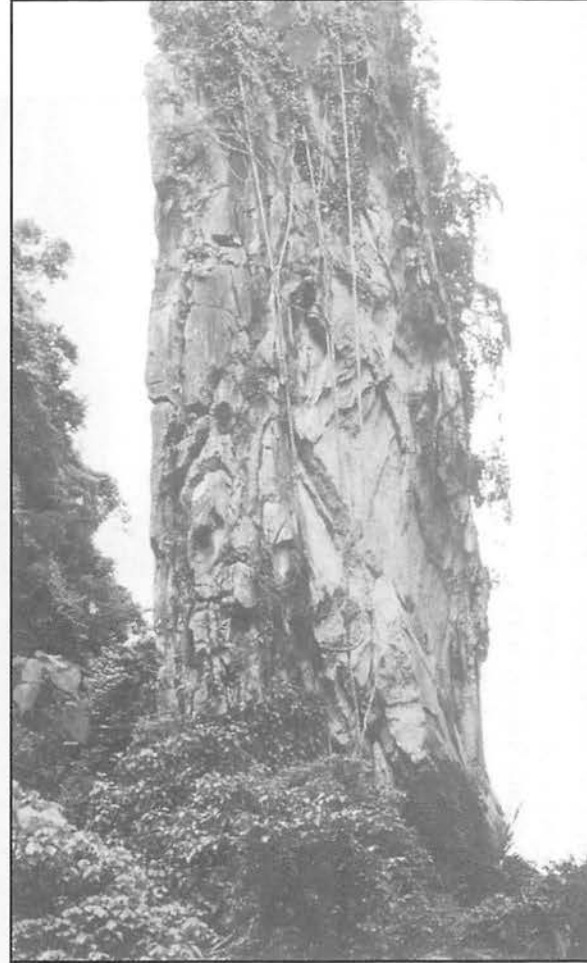


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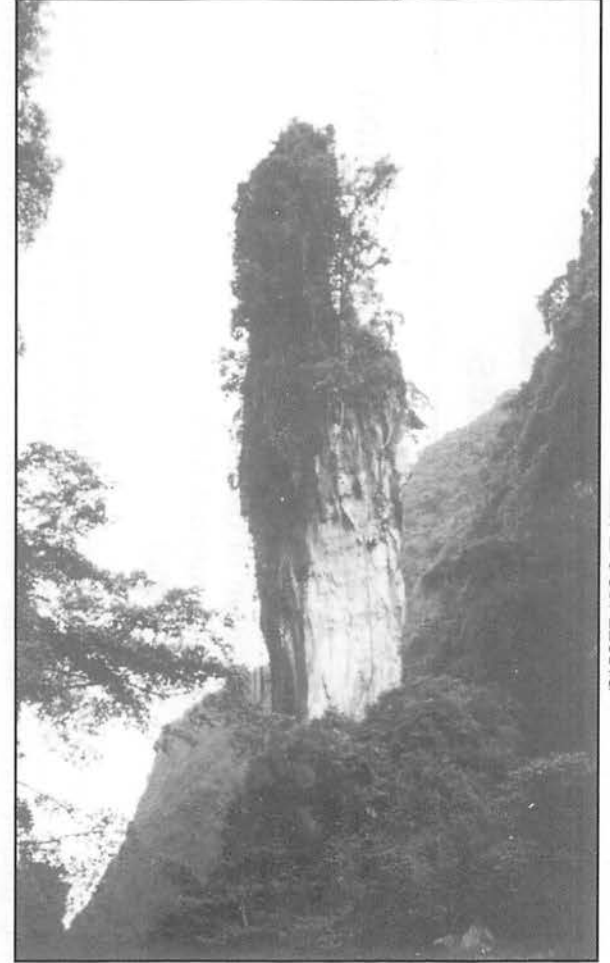


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Formation evaluation in cased holes

ALAN SIBBIT

Laporan (Report)

Mr. Alan Sibbit gave the above talk on 22nd June at 12.00 pm at the Shangri-La Hotel in Kuala Lumpur. The talk was organised by the newly formed Malaysian Chapter of the Society of Professional Well-Log Analysts (SPWLA) and the Geological Society of Malaysia. More than 80 participants turned up for the presentation that covered various topics pertaining to cased hole logging. Schlumberger Oilfield Services was generous in sponsoring the after-talk lunch.

Mr. Alan Sibbit is an Interpretation Advisor at the Schlumberger Center for Advanced Formation Evaluation in Sugarland, Texas. He joined Schlumberger as a Field Engineer in 1978. Since 1980, he has worked predominantly in formation evaluation both in Research and Engineering, and on field assignments throughout Asia. Mr. Sibbit graduate with a B.A. in Mathematics from the University of Cambridge in 1974, and is a member of the SPE and SPLWA.

Description of Talk

In addition to being a barrier to flow, casing and cement limit the range of formation properties that can be measured with logging instruments. Cased hole formation evaluation is usually done as a last resort on wells that could not be logged in open holes, or in old wells with minimal or poor logging data. Recent improvements in technology, in particular in acoustics and neutron spectroscopy, have expanded the range of evaluation problems that can be carried out in cased holes.

The presentation covered a summary on why cased-hole logging is done, the measurements that can be made and a discussion on the strength and limitations of each techniques. Among the tools discussed were those of electro-magnetic, acoustic/seismic and nuclear nature. Evaluations made in deltaic reservoirs were shown as example.

CNL



ALAN SIBBIT

Some of the participants/organisers.

Leachate migration through clay liners — the leaching column test

TAN BOON KONG

Laporan (Report)

Tan Boon Kong gave the above talk on 23 June 1998 at the Geology Department, University of Malaya.

Attendance was good, about 40 turned up, mostly students and lecturers from the University of Malaya and Universiti Kebangsaan Malaysia. There were a number of participants from the private sector, including Alam Flora and EIA consulting companies. The interesting paper dealt with how tests on various materials were carried out to find out the suitability of clay as liners for preventing pollutants from passing through to the ground. Tests were conducted by the speaker in Wales during his recent sabbatical leave.

As a bonus a slide show on beautiful Wales was shown after the talk.

Saim Suratman

TAN BOON KONG



"Hi folks, you can learn more of the leaching column test in this issue of *Warta Geologi*"



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BERITA-BERITA PERSATUAN **News of the Society**

KEAHLIAN (Membership)

The following applications for membership were approved:

Full Members

- | | |
|---|--|
| <p>1. Stephen John Hill
Department of Environmental Science,
University of Plymouth, Drake Circus,
Plymouth PL4 8AA, U.K.</p> <p>2. Grapes R.H.
School of Earth Sciences, Victoria
University of Wellington, P.O. Box 600,
Wellington, New Zealand.</p> | <p>3. Osama Ahmad Mustafa Abdullah Abu
Libda
Quality Control/Assurance Department,
Putaran Mutiara Sdn. Bhd., P.O. Box 73,
10 Jalan P. Ramlee, 50250 Kuala Lumpur.</p> |
|---|--|

Student Members

1. Mohd Asri bin Ann
University Malaysia Sabah

GSM

PETUKARAN ALAMAT (Change of Address)

The following members have informed the Society of their new addresses:

- | | |
|--|--|
| <p>1. Mohamed Taher A. Taha
Schlumberger Argentina S.A., Av. Belgrano
863, Piso 10, 1092 Buenos Aires, Argentina.</p> <p>2. Tong Pow Mun
Racal Survey (M) Sdn. Bhd., B6-8, 6th
Floor, Block B, Megan Phileo Promenade,
189, Jalan Tun Razak, 50400 Kuala
Lumpur.</p> | <p>3. Felix Tongkul
Geology Programme, School of Science and
Technology, Universiti Malaysia Sabah,
Locked Bag 2073, 88999 Kota Kinabalu,
Sabah.</p> |
|--|--|

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PERTAMBAHAN BAHARU PERPUSTAKAAN (New Library Additions)

The Society has received the following publications:

1. Episodes, vol. 21, no. 1, 1998.
2. American Museum Novitates, nos. 3227, 3226, 3223, 3221, 1998.
3. Mineralogia Polonica, vol. 27, nos. 1 & 2, 1996.
4. Journal of Science of the Hiroshima University, vol. 11, no. 1, 1998.
5. Natural History Research, special issue, nos. 3 & 4, 1997.
6. SOPAC News, vol. 14, nos. 4, 1997.
7. Journal of AGID no. 4/5, 1996/97.
8. Oklahoma Geology Notes vol. 57, nos. 4-6, 1997.
9. Memoirs of the Geological Survey of Belgium, no. 43, 1997.
10. AAPG Bulletin vol. 82/4, 1998.
11. Institute of Geological & Nuclear Sciences, monograph nos. 13 — text & plates (1996); 16, 17 & 18 (1997).
12. American Museum of Natural History, Bulletin no. 235, 1998.
13. Monthly statistics on mining industry in Malaysia, Nov & Dec 1997.
14. Science Reports of the Institute of Geoscience, University of Tsukuba, vol. 19, 1998.
15. Acta Geoscientia Sinica, vol. 18, no. 4 (1997) & vol. 19, no. 1 (1998).
16. U.S.G.S. Prof. Paper 1997: no. 1585; 1998: 1551-C.
17. Journal of Suijiazhuang, Univ. of Economics, vol. 50, no. 5, 1997.
18. International Mining & Minerals, vol. 1, no. 1, 1998.
19. Institute of Geoscience, The University of Tsukuba, Annual Report no. 23, 1997.
20. Geological literature of Russia: Bibliographical yearbook for 1991 year, vol. I & II (1997).

BERITA-BERITA LAIN Other News

Local News

Temena oil field handed over to Petronas Carigali

The Temena oilfield offshore Bintulu operated by Sarawak Shell Bhd. has been transferred to Petronas Carigali Sdn. Bhd., a subsidiary of the national oil corporation, Petronas.

A statement from Sarawak Shell said the transfer of the operatorship was held last Thursday at the Petronas Carigali office in Lutong, Miri.

It said 19 frontline operation staff were affected by the handover with some redeployment by Shell.

Following Temena, two other oilfields, Bayan

and D18 in the Balingian acreage offshore Sarawak will also be handed over to Petronas upon their expiry of operatorship by Shell under the 1976 production sharing contract (PSC) arrangement.

Shell's exploration and development activities in Sarawak waters would continue in order to mature further oil and gas reserves, the statement said.

Field relinquishment and handover were normal in an exploration and production environment under the PSC agreements with Petronas, Shell said.

Star, 4.5.1998

Haze likely to hit Malaysia soon

The haze will hit Peninsular Malaysia, Sabah and Sarawak in about two weeks if the fires in Sumatra and Kalimantan are not put out by then, said Science, Technology and Environment Minister Datuk Law Hieng Ding.

He said the south-west monsoon, which begins in mid-May, would blow the haze to the peninsula from the Sumatran forest fires while fires in Kalimantan would affect Sabah and Sarawak.

The best way to prevent the haze from recurring before or during the Commonwealth Games here in September, he said, was to put out forest fires in Malaysia and Indonesia while they were still small.

Hot spots must be quickly put out "before they become too big to control," he told reporters after the ministry's Excellent Services Awards Presentation at the National Science Centre yesterday.

Law said the Government had been implementing antihaze measures since November together with Singapore, Brunei and Indonesia but noted that "we need to increase monitoring capabilities so that we can act early before the dry spell begins."

He said the affected Asean countries, especially Indonesia, must work out an effective monitoring system to enable early detection of hot spots.

Law said 256 open burning cases had been detected nationwide between April 8 and last Sunday, adding that most of the cases were in Sabah (42 fires), followed by Selangor (39), and Kedah, Perlis and Langkawi (29).

"Most of the fires occurred in forests and plantations," he said, adding that in 55 cases, those responsible would be taken to court.

He said the ministry would submit the proposed amendments to the Environmental

Quality Act for stiffer penalties on open burning offenders at tomorrow's Cabinet meeting.

Law also urged the public to refer to the Air Pollutant Index (API) to get updates on the haze.

"The API gives a correct indication of the level of pollutants in the air."

"Visibility is sometimes reduced because of high moisture content in the air."

In the API nationwide yesterday at 11 am, Kuala Lumpur recorded the highest reading of 77, followed by 68 in Nilai and 67 in Gombak.

Star, 5.5.1998

Genting subsidiary announces more gas finds off Indonesia

Genting Oil and Gas Ltd., a wholly-owned subsidiary of Genting Bhd., has announced three more successful gas finds in the Muturi Block off Irian Jaya in which it has an interest.

These wells proved the extension of the Vorwata Field into the Muturi Block would contribute to gas reserves for the proposed Pertamina-operated Tangguh liquefied natural gas (LNG) project in Irian Jaya, Genting said in a statement yesterday.

The Muturi block is held under a production sharing contract with Pertamina, the Indonesian state oil company.

Genting Oil and Gas, through its subsidiary Cairns Ltd., has a 45% interest in the block, while the operator, British Gas plc subsidiary BG Exploration and Production Ltd. holds a 50% stake and Indonesian company PT Saptapetra Wisesa has 5%.

According to the statement, two of the wells, Vorwata-9 and Vorwata-10, were drilled as expendable, appraisal wells, which accounted for their abandonment at the end of the operations.

"The gas proven by these wells will be produced from development wells drilled from a central production platform in accordance with the development plan, which has yet to be finalised," the statement said.

It said the third well, Vorwata-11, flowed gas at a rate of 35 million standard cubic feet per day — the second highest flow rate for any of the wells drilled to date in the Vorwata Field.

The statement said further information about the success of the Muturi drilling programme would be announced in July, when reserves available to the Tangguh project would be independently certified.

Star, 6.5.1998

Barren ex-mining areas turning into lush forests

The Perak Forestry Department has been successful with its programme to rehabilitate former mining land by planting trees.

Since the programme began in 1991, 60,000 *acacia mangium* saplings have been planted on more than 100 hectares of former mining land in the State.

The land covers mining areas in Tanjung Tualang, Tronoh and Chepor. The affected areas were planted in clusters in stages, from 1991 to 1994.

State forestry deputy director Nik Mohd Shah Nik Mustafa said the afforestation project was part of a massive effort by the State Government to regreen disused mining land for

aesthetic reasons.

He said the State Government had spent RM250,000 under the Sixth Malaysia Plan to plant and maintain the fast-growing *acacia mangium* species. This helped to restore the forest cover lost when the land was being mined.

The forest conservation and rehabilitation programme also included the reafforestation of other open spaces, maintenance of a virgin jungle reserve and the prevention of soil erosion.

The largest area of former mining land which was replanted is located at Tanjung Tualang, about 35 km from here. It covers 150 ha.

Of the 150 ha, 76.2 ha were planted with *acacia mangium*, as this is the only variety

known to survive on ex-mining soil.

"The project shows a 95 per cent success rate."

However, there were a few teething problems.

Nik Mohd Shah said the area at Tanjung Tualang was prone to strong winds and heavy rain, and in the early years some of the trees were flattened during the rainy season.

Other problems include buffaloes using the area as a grazing field. They rub their bodies along the trunks, warping them, and some use the branches to sharpen their horns.

However, Nik Mohd Shah said these were minor problems which were overcome by monitoring the area closely and replacing dead trees.

The plot in Tanjung Tualang, which was

formerly barren, has clusters of *acacia mangium* between five and seven years old. It takes 10 to 15 years for the tree to mature.

Nik Mohd Shah also said the department had tried planting *sentang* but it was not successful.

He said *acacia mangium* was a tough variety and could grow on any soil. Even so, a fertiliser called the "Christmas Island rock phosphate" had been used to rehabilitate and soil before the planting was begun.

Under the Seventh Malaysia Plan, Nik Mohd Shah said the State Government had allocated RM1 million for the forest conservation and rehabilitation programme. This, he said, would also include "greening" other ex-mining areas in the State.

NST, 7.5.1998

Midas touch in recycling lead from car batteries

Midas had the gift of turning anything he touched into gold. Local lead and lead alloy producer Metal Reclamation Bhd., figuratively speaking, transforms discarded lead into money.

At amusing analogy of a family-grown company which has eked out for itself a position as the largest single lead producer in Asea.

If you wonder where all the thousands of discarded car batteries end up each year, one destination is the lead recycling plant of the company in Taman Selayang Baru Industrial Estate in Selayang, Selangor.

Malaysian may not have heard much about such recycling activities but Metal Reclamation has been doing it for the past 28 years.

Not missing out on the potential of reclaiming, recycling and reusing the lead derived from used car batteries, its managing director Lim Sheng Seaw cofounded the business with his brother in 1970 to turn lead recycling into a solid business.

"We grow with the scrap generation in Malaysia, was the first thing Lim said when asked to talk about the business growth over the years."

Simply put, more scrap generated in the form of used car batteries translated into more business for the group.

Metal Reclamation, as its name suggests, is involved in the reclamation, manufacture and

sale of lead and lead alloys, as well as in the trading of metal scrap.

It claims to be the single largest lead producer in Asean which almost single-handedly fulfills the country's lead supply demand of about 36,000 tonnes a year.

With its 99.97 per cent refined lead under the brand-name MRISB-Malaysia registered with the London Metal Exchange, the company is also ready to join the ranks of listed companies on the KLSE second board soon.

"Consider the average life-span of a car battery of about two years with about four million cars in the country, that is a lot of business. We collect all these used car batteries nationwide for recycling," Lim said.

Metal Reclamation Bhd., a holding company with two wholly-owned subsidiaries namely Metal Reclamation (Industries) Sdn. Bhd. and Metal Reclamation Industries (Sabah) Sdn. Bhd., generated a group pretax profit of RM6.95 million from a turnover of RM203.88 million for the year ended Dec 31, 1997.

Reflecting its bullishness on the prospects of lead recycling and supply industry, Metal Reclamation will increase its activities with a proposed RM63 million plant expected to almost double production capacity from 36,000 tonnes to 70,000 tonnes of pure lead and lead alloys per year.

Lim said the local market demand for lead enjoys a high growth rate and the company has been looking to grab a much bigger market share since 1990 considering the lack of local lead supplier.

"We are not a monopoly but you can say we dominate the local market for lead, and we go all the way to produce lead. There are a few smaller lead recycling activities here but they only do melting and do not produce finished lead," he added.

The company recycles lead materials mainly from lead-acid batteries as well as some lead sludges and drosses.

A lead-acid battery contains about 60 percent lead, of which 99 per cent is recovered to make

lead and lead alloys, while the 10 per cent polypropylene and 20 per cent acid content is also fully recycled.

Lim said Metal Reclamation provides a service to the nation by recycling all the lead from car batteries which would otherwise be discarded with hazardous effect to the environment.

When asked on the reasons why investors should look positively at the prospects of the group, Lim said: *"We are a very established company with a good track record on profits, and are in a dominant position as a local lead producer. Our expansion in West Port will enhance our business,"* he said.

NST, 11.5.1998

Petronas oil deal in Sudan bearing fruit

Petronas, which will invest US\$600mil to drill for oil in Sudan, is expected to extract up to 250,000 barrels a day with the first export in June next year.

Petronas president and chief executive officer Tan Sri Mohamed Hassan Marican said the investment was its single largest with US\$200mil already spent.

The oil fields, located in southern Sudan, covers a total area of 48,914 sq km.

Since 1997, a total 29 wells had been drilled in the oil fields resulting in the discovery of recoverable oil reserves of 660 million barrels, he told Malaysian newsmen here yesterday.

"The first oil for export is expected by June next year, with an initial flow of 150,000 barrels a day," he said.

Petronas holds a 30% stake in the integrated petroleum exploration and development project.

The other partners in the company, Greater

Nile Petroleum Operating Company (GNPOC), are China National Petroleum Corporation (40%), State Petroleum Corporation (25%) and Sudapet (5%).

"This is also our first onshore operation. We have also brought in a number of Malaysian contractors to work here," he said.

The award of the integrated project to GNPOC was formalised with the signing of a 30-year Exploration and Production Sharing Agreement for three areas and Crude Oil Pipeline Agreement with the Sudanese government in March.

"The agreement calls for the consortium to construct, own and operate a 1,540 km-long export pipeline from the fields to Port Sudan," he said.

Petronas will also set up a training centre and laboratory facilities with Sudan.

Star, 16.5.1998

Puncak Niaga plans two reservoirs in Pahang

Two reservoirs may be built in water-rich Pahang in the next two or three years to supply Selangor and the Federal Territory with water under the proposed Pahang-Selangor Raw Water Transfer project, Puncak Niaga executive chairman Datuk Rozali Ismail said yesterday.

He said the company's engineers would begin

initial inspection of the 1,500 sq km site soon to outline the specifications of the two new reservoirs.

"A proposal will be sent to the Economic Planning Unit after we complete all the necessary reports. If the plan is approved, the dams, located in Kelau and Telemong, can supply 1,620

million litres of water per day," he told reporters after leading pressmen on an aerial inspection of the proposed site yesterday.

Rozali said the final cost of the project would include compensation for affected parties, including farmers, owners of oil palm and rubber estates and orang asli landowners.

He added that discussions on the project's concession agreement were still going on with the Pahang and Selangor state governments.

"This plan is only a proposal to supply water to Klang Valley residents, expected to be 2,000 million litres per day by 2005-2010," he added.

"The proposal will be sent to a technical committee comprising Pahang and Selangor state government officials."

"A final paper will be submitted to the

Economic Planning Unit for study and approval," Rozali said.

The inter-state water transfer site in Pahang is estimated to provide 354.5 million cubic metres of raw water from the Kelau, Bentong, Semantan and Telemong rivers.

Rozali said a 37.5 km-long tunnel with a diameter of 5.2 m would be constructed in the Main Range to the Langat Dam at Kampung Dusun Tua in Selangor.

"Puncak Niaga will also discuss with the Perak state government another proposal to build a dam at Sungai Bernam near the Perak-Selangor border," he added.

In April, the Pahang state government indicated its readiness to supply water to Selangor and the Federal Territory.

Star, 17.5.1998

Esso to spend RM76m on new oil exploration

Esso Production Malaysia Inc. will spend US\$20 million (RM76 million) in the next two years on new oil exploration in Malaysia.

Its chairman and chief executive officer, Datuk Philip Dingle, said the company will install two platforms in offshore Terengganu this year.

"One is a satellite platform in Seligi, which will be one of our larger fields, and the other is a platform in Raya," he said in an interview in Kerteh.

EPMI is constructing a new satellite platform in Tapis, its fifth, in offshore Terengganu.

Dingle said EPMI has also acquired two blocks in Sabah, adding that in Sarawak it is joining a consortium that is working on four blocks.

"We are producing about 300,000 barrels of petroleum a day but some of our older fields are on the decline. As we bring in new fields, we will be able to maintain the production level for a number of years," he added.

Dingle said in partnership with Petronas Carigali, EPMI is expanding its gas production and supply capability and will start working on a new field, Angsi, off the Terengganu coast in 2001.

He said EPMI is currently producing one billion cubic feet of natural gas a day and expects to increase production to 1.5 billion cubic feet a day by 2000 in partnership with Carigali.

EPMI, which has invested about RM20 billion in the country since its inception more than 20 years ago, has 27 platforms in 12 fields off the coast of Terengganu.

Dingle said EPMI has been affected by falling natural gas and crude oil prices, which declined by about 40 per cent last year.

Meanwhile, EPMI's sister company, Esso Malaysia Bhd., has been affected by the ringgit's depreciation.

It posted a pre-tax loss of about RM74 million last year due to higher costs of imported raw materials and forex translation losses.

NST, 23.5.1998

Perak rakes in RM253,000 from royalties

Perak has collected more than RM253,000 in royalties from tin ore over the past eight months.

This means tin is once again an income earner for the State as royalty has not been collected since the late 1980s when the price of tin dropped below RM20.

State Mining Department's assistant mining officer Abdul Rejab Ghani said Perak started to collect royalties when the prices rose towards the end of last year.

"A total RM253,799.89 in royalties was collected for the seven months between October last year and April this year," he said, adding that no royalties would be collected if the tin price dipped below RM20 per kg.

He said the price of tin started to climb in October, fell in November and increased again in December.

It has been hovering above the RM20 per kg mark since. Last Friday, the Kuala Lumpur Tin Market closed the week at RM22.20 per kilo. It rose 31 sen to close at RM22.51 per kg yesterday.

"The price of tin started improving in tandem with the depreciation of the ringgit against the US dollar," said Abdul Rejab.

He added the ringgit was expected to stabilise at around RM3.50 to the US dollar for a period of time and this augured well for the tin industry.

"We expect the good prices to be sustained and this will continue providing revenue to the State."

Perak's tin revenue is collected by its sole smelting company, Malaysia Smelting Corporation Bhd., which buys tin from miners. The purchase price from the miners includes the royalties.

NST, 26.5.1998

Proposal to revive 10 tin mines to reduce imports

Malaysia can reduce its dependency on tin imports and save RM80 million annually in foreign exchange if it can revive some 10 dormant mines.

Kuala Lumpur Tin Market chairman Datuk Mohd Ajib Anuar yesterday said the revival of the mines — mainly in Perak and Selangor — would put an end to the import of 2,000 metric tonnes of tin annually.

The move would also ensure the country would not lose its expertise in tin mining technologies in the next five years, he added.

The country's annual tin consumption stands at 7,000 metric tonnes. Currently, 15 mines in the country produce 5,000 metric tonnes while the remaining 2,000 metric tonnes are imported from over 20 countries including China, Russia and South American nations.

"The Malaysian Chamber of Mines plans to submit a memorandum with appropriate recommended actions for the revival of the tin industry to the Primary Industries Ministry and the Selangor and Perak State Governments in a few months."

Mohd Ajib, who is the chief executive officer and executive director of Malaysia Smelting Corporation, was speaking to reporters after the

company's annual meeting in Penang.

Mohd Ajib, who is also council member of the Malaysian Chamber of Mines, said the chamber's members comprised over 20 quarry and tin mine operators.

"Many tin miners have expressed a willingness to re-open dormant gravel pump mines, 10 of which have the potential to be revived."

"The revival of these mines to not require major capital investments due to existing infrastructure," he added.

The decline of the country's tin mining industry around the mid 80s saw the closure of many mines nationwide in the early 1990s, he said.

Mohd Ajib said the rehabilitation of the mines was important to protect tin mining expertise.

"If no effort is made to create employment opportunities in this sector soon, Malaysia could lose its technical expertise in the field in five years."

He added that apart from meeting local demand, the revival of the mines could also aid in the recovery of the economy.

"Concerns on the environmental effects of tin

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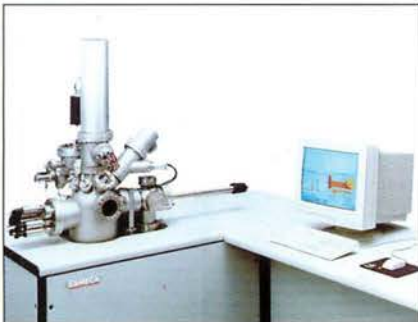
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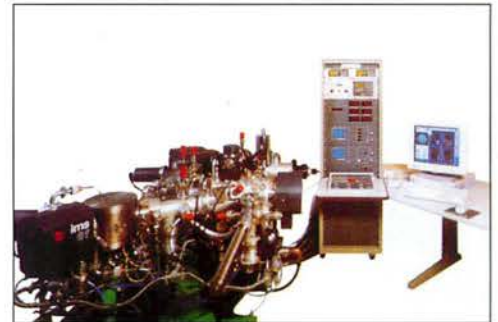
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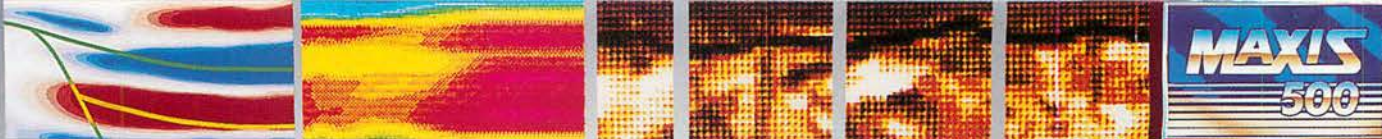


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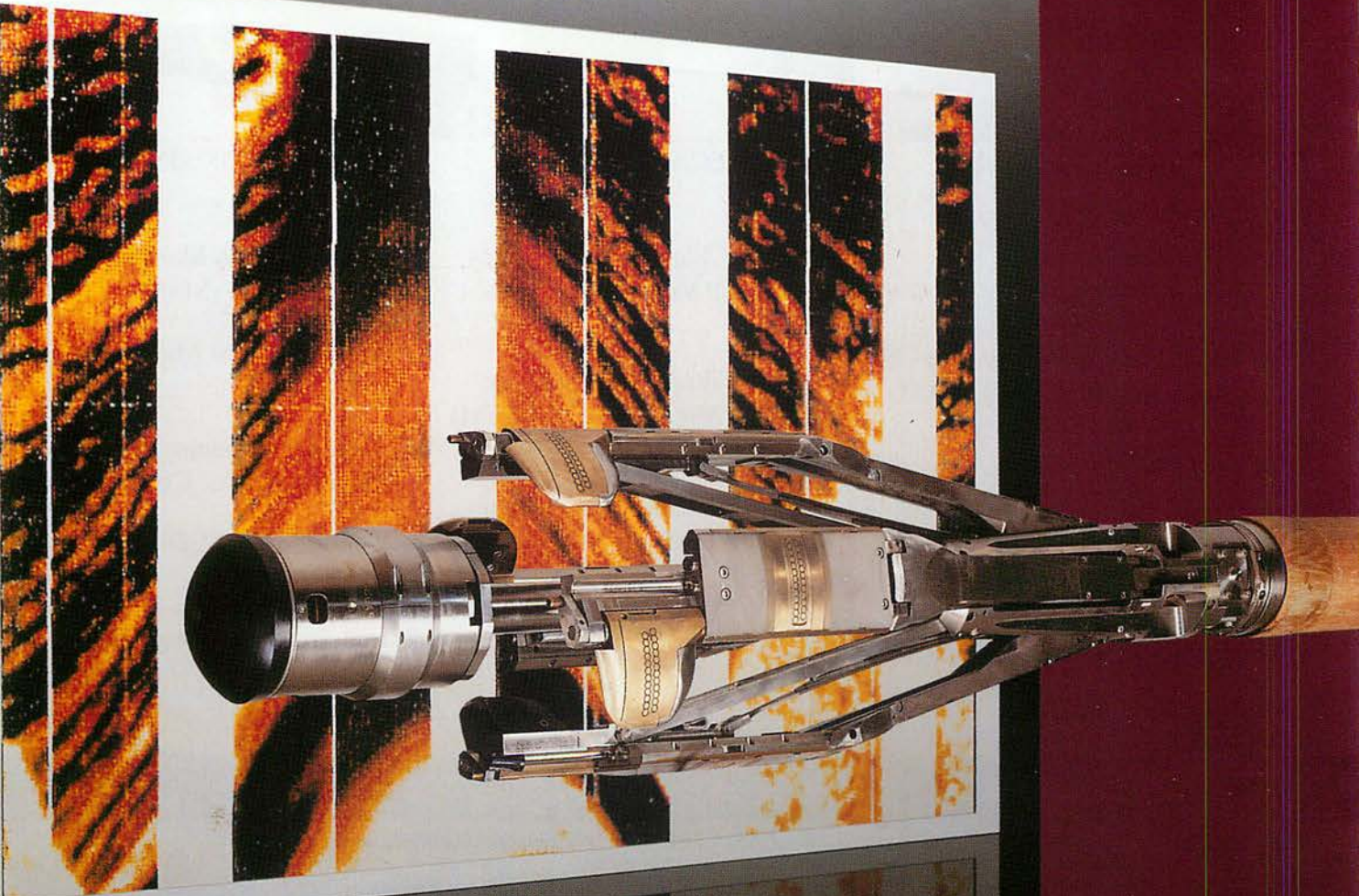
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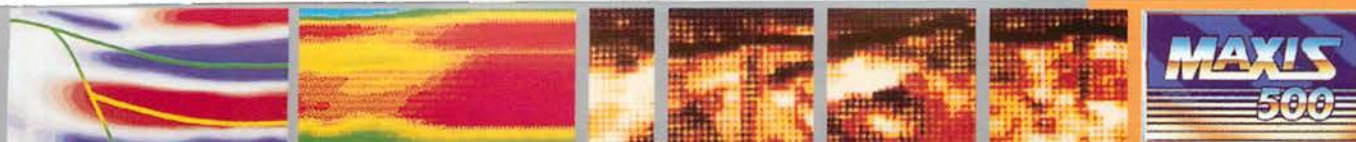
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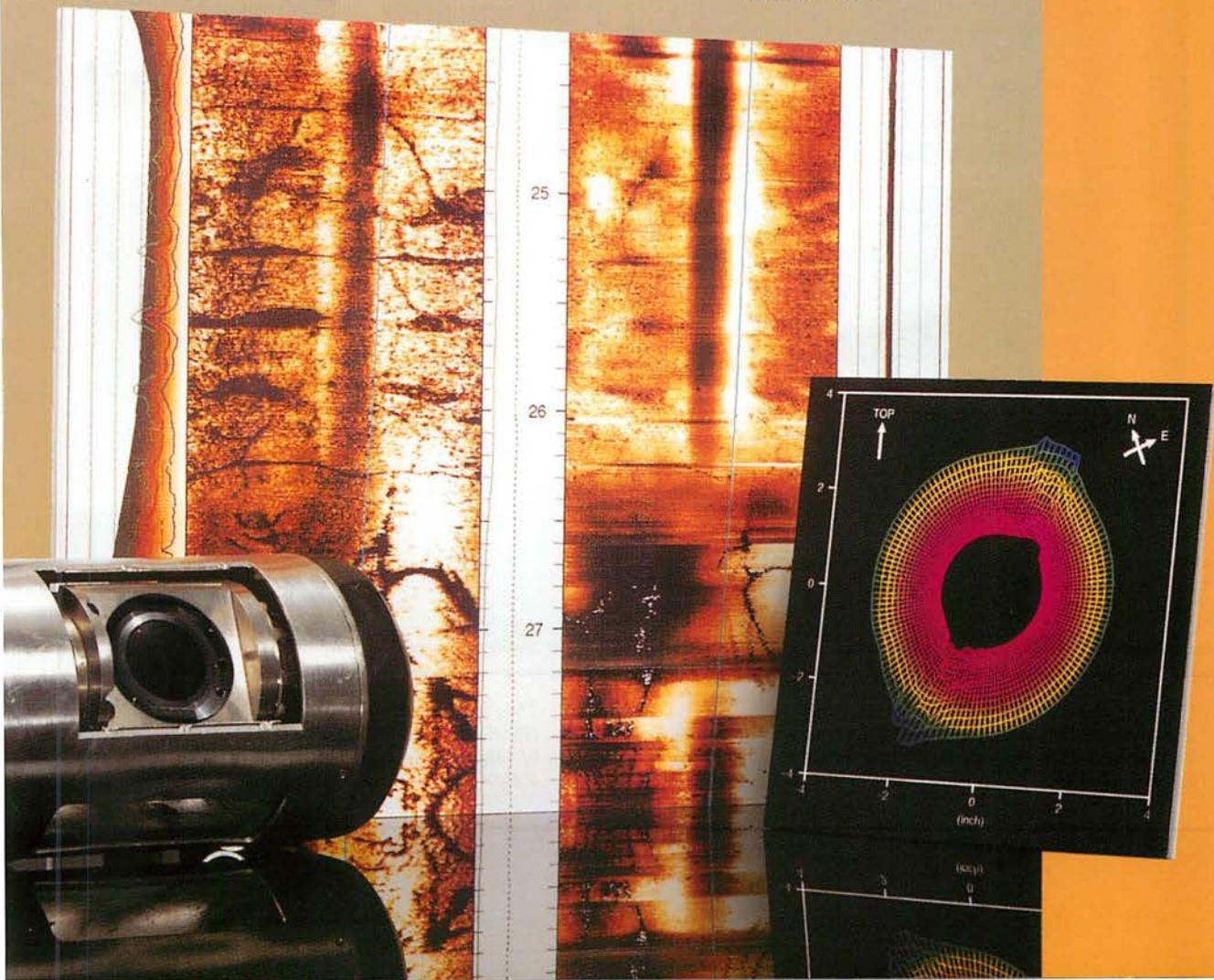
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Common Rocks of Malaysia

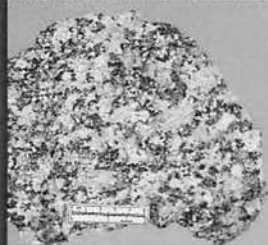
A full colour poster illustrating 28 common rocks of Malaysia. With concise description of the features and characteristics of each rock type including common textures of igneous, sedimentary and metamorphic rocks.

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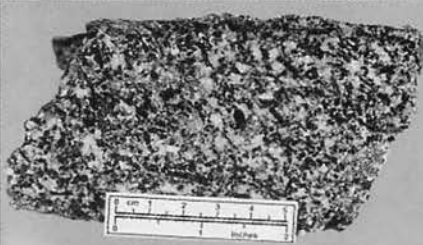
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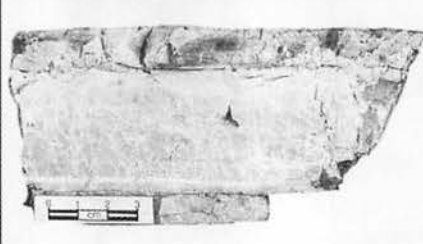
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13. Conglomerate (Pulau Redang, T)



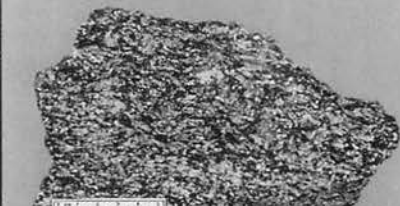
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mines can be addressed by making Environmental Impact Assessment a requirement when these mines are rehabilitated," he said,

adding that tin mines could also serve as a source of water in times of crisis.

NST, 26.5.1998

Tin smelting firm to take steps to improve productivity

Malaysian Smelting Corp. (MSC) will implement more aggressive measures to improve productivity and cost effectiveness and undertake currency and price hedging in the face of the sharp depreciation of the ringgit.

Its chief executive officer Datuk Mohd Ajib Anuar said the company would continue to review and improve process development, sampling and assaying procedures to minimise physical loss of metal during processing.

"We are already operating at full capacity now, and have no plans to more capital injection to expand the smelting plant."

"We will instead work on improving the unit cost of production to offset the increase in costs of foreign currency," he said after the company's AGM yesterday.

Mohd Ajib said MSC hoped to perform better this year despite the difficult economic environment, compared to the pre-tax profit of RM18.2 mil in 1997, which was the highest since 1993.

He added that MSC hoped to improve its turnover by 20% from RM375mil in 1997.

He said despite reduced demand for tin in the Asia-Pacific region from countries like Japan, Taiwan and South Korea, this was offset by increased demand from United States and Europe.

"On the whole, we expect to see an increase of 3% to 5% in global tin consumption yearly despite the regional economic downturn because the western markets are still buoyant," he said.

Mohd Ajib said he expected to see a real

increase in tin consumption in the long-term in the global market especially with new uses for tin in the electronics industry, and upcoming European Union legislation phasing out the use of lead pellets for shotguns.

"Globally, tin consumption is expected to have a net increase of 11,000 to 12,000 tonnes this year, and consumption is expected to increase by 25,000 tonnes by the year 2000," he said.

On MSC's investment in Canadian Adex Mining Inc., he said Adex was now sourcing appropriate technology for ore extraction at a viable level.

He said MSC was continuing its long-term strategy to acquire tin mining assets, in order to have a captive source of ore supply, adding that found some viable deposits in Myanmar and Vietnam.

MSC operates the only tin smelting plant in Malaysia, contributing over 10% to world tin production of 200,000 tonnes annually.

Its profit after taxation rose by 40% to RM12.4mil compared with RM8.8mil achieved in 1996. The company's cash position has also strengthened, recording an increase in cash balance of RM21.1mil to RM43.3mil at the end of December 1997 compared to a that of a year earlier.

MSC's principal activity is the smelting of tin concentrates and tin bearing materials, the production of various grades of refined tin metal under the MSC brand name and the sale and delivery of refined tin metal and by-products.

Star, 26.5.1998

RM180m copper plant for Pasir Gudang

Finnish metal group, Outokumpu, has invested RM180 million in a copper manufacturing plant in Pasir Gudang, Johor.

The factory, which has started partial production, makes an array of products such as anode balls used for surfacing, copper bars used

as electricity conductors and copper tubes for air-conditioning, refrigeration and other industrial applications.

These are made from grade A copper cathodes and copper strips imported from Latin America and other Outokumpu plants in Europe.

Outokumpu Copper Products (M) Sdn. Bhd. managing director Pentti-Jahi said the Johor factory was the group's second investment in Asia after its other plant in China, which was opened in late 1996.

The modern Johor factory uses equipment from Outokumpu's technology units in Finland and Sweden, as well as from other companies in United Kingdom, Austria and Germany.

"Malaysia was chosen because of its prime location at the hub of the Asian market, good logistics, availability of sound technical expertise, computer knowledge, and complementary infrastructure," he said.

Jahi said the Pasir Gudang port would also facilitate the company's exports as well as the import of equipment and raw materials.

"About 80 per cent of our production will be exported to Indonesia, Thailand, Korea, Taiwan, China and Japan, while the rest is for domestic use," he added.

The state-of-the-art Johor factory is fully air-conditioned to prevent the copper from reacting with the high humidity here. The production processes are computer-controlled and aided.

Jahi said although the Asian economic downturn had adversely affected the group's business with a 40-60 per cent drop in demand, the Pasir Gudang complex was not affected as it was not in full operation yet.

"We are targeting sales of between RM200

million and RM300 million once we go into full production," he said.

The factory is run by a specialist team of seven expatriates and about 93 Malaysians.

"The establishment of this plant should boost the reputation of advanced Malaysian technology, under the Outokumpu name, in the regional market," said Jahi.

As Outokumpu technology has been adopted by several other companies in Malaysia and elsewhere, the Pasir Gudang production unit may also engage in information exchange, training and networking with other local copper-producing companies using similar smelting and casting technology.

This environment-conscious organisation has a central waste water treatment unit, and a closed circuit system barring the open discharge of effluents into the air.

Expansion is among the firm's future prospects. There is space both within the factory premises and the land acquired for expansion.

Stainless Steel, one of Outokumpu's major business areas, is a likely possibility, but nothing has been defined as yet.

With the mission of putting its expertise to use in responsible metal production and improving customer services, Outokumpu Malaysia is augured to be a forerunner in the field of wrought copper and copper alloy products in Asia.

NST, 8.6.1998

Pahang Cement eyes export markets

Despite a slowdown in the construction sector, Pahang Cement Sdn. Bhd. does not anticipate any difficulty in looking for markets for its product.

Menteri Besar Tan Sri Mohd Khalil Yaakob said yesterday that this was because the cement plant in Bukit Sagu, about 50 km from Kuantan, was also orientated towards the export market.

He said Pahang Cement, a 50:50 joint venture between the State Government and YTL Cement Bhd., was eyeing the Vietnam, Cambodia and Laos markets.

The Pahang Government's equity is held by Pasdec Corporation Sdn. Bhd. (33.3 per cent) and State Secretary Incorporated (16.7 per cent).

As for the domestic market, Khalil said

there would be continuous demand for the product as it was the only cement plant serving the eastern industrial corridor.

Speaking to reporters after checking on the preparations for the official opening of the RM700 million cement plant by Prime Minister Datuk Seri Dr. Mahathir Mohamad tomorrow, Khalil said the cement plant was a viable venture. The cement plant project was mooted in the early 1970s by the then Prime Minister Tun Abdul Razak Hussein. Pahang Cement Sdn. Bhd. was incorporated on Aug 5, 1971 by the State Government.

The joint-venture agreement to implement the project was signed between the State Government and YTL Cement in 1993.

Limestone deposits around the Bukit Sagu plant are enough to cater for the company's operation for the next 70 years, if it continues to operate on a single production line.

The plant, which has a capacity of 1.2 million tonnes per annum, was commissioned in July last year.

NST, 12.6.1998

Call to acquire new techniques

Industries need to be tuned in to developments in technology, processes and breakthroughs in materials so that they can produce better products more efficiently.

New discoveries in materials that can complement, enhance or replace existing materials, especially naturally-occurring materials, should be of special interest.

Minister of International Trade and Industry Datuk Seri Rafidah Aziz yesterday said Malaysian companies can accelerate the process of technology acquisition by establishing joint ventures with foreign partners involved in new materials industry.

By doing so, they could benefit from their partners' expertise and established marketing network.

Rafidah said that between 1994 and April this year, MITI approved 22 projects with high-technology incentives, whose capital investments totalled RM20.183 billion. Of this, 81.9 per cent are foreign investments.

They are in the electrical and electronics sector (58.5 per cent), fabricated metal products sector (25.6 per cent), and transport and equipment sector (9.9 per cent).

Rafidah was speaking at the opening of Universiti Malaya's Advanced Materials Characterisation Allied Laboratories. Amcal is a one-stop centre for training, testing and research.

She said the Government encourages the development of high-technology industries including those in new and advanced materials.

The Government also supports efforts to commercialise research and development results such as in the area of new materials.

Under the Commercialisation of Research and Development Fund of the Malaysian Technology Development Corporation, between 50 per cent and 70 per cent of the cost of undertaking the commercialisation of R&D

efforts can be considered.

Activities eligible for such grants include market and feasibility studies, design and development of the product or process, standards conformance and certification and intellectual property registration.

High-technology companies engaged in the production of promoted products in the areas of new and emerging technologies are eligible for either the pioneer status incentive, or investment tax allowance.

Non-fiscal incentives offered include flexibility in the employment of foreign scientists and technical experts and the approval to open foreign exchange accounts.

To be eligible, these companies need to fulfill certain criteria. Local R&D expenditure to gross sales has to be at least one per cent on an annual basis.

Companies are allowed three years from commencement of operations to comply.

In addition, the percentage of science and technical graduates to the total workforce has to be at least seven per cent.

Rafidah said in the advanced materials industry, several sectors were identified for consideration of such incentives.

They are polymers and biopolymers, specialty polymer materials, high efficiency separation membranes used in the medical field, artificial organs, super conductors, fine or advanced ceramics, and high-strength composites.

She commended Amcal for creating a link between academia and the private sector, and urged it to use Miti's network to publicise and commercialise its functions.

"It is time for the community and academia to strategise a comprehensive way forward, complement each university and find your own niche to strengthen the country's industries," she said.

NST, 13.6.1998

Glittering future for world gold industry

A silver (or rather gold) lining in the clouds might emerge for gold demand if present events are of any indication, said World Gold Council's chief executive for the Far East region Kerr Cruikshanks.

He said three events in the coming months might just be the catalyst needed to regain the yellow metal's once lofty status as a safe haven "stateless" currency.

First, if fund managers from the United States and Europe start to take the view that stockmarkets in the US and Europe have reached their peak and are poised for a fall, they are likely to want to reduce their equity portfolio and stock up on other investments.

Cruikshanks expects precious metals would be included in their portfolio diversification plans.

Second, Cruikshanks expects the European Central Bank to keep some of its reserves in gold.

"Gold will certainly be included in their reserves. The question is how much," he said during an interview in Kuala Lumpur recently.

The third possible catalyst would come from the Asian economic problem.

The higher price of gold as a result of the

stronger greenback prompted poorer Asians to sell it in exchange for cash.

"National duty" in South Korea and Indonesia also caused a massive sell-off. "Although this does not help the price of gold now, when the Asian economies recover, we expect a huge buying opportunity for restocking."

"This is because people realised how gold had saved them during the crisis and now value it more," Cruikshanks said.

He forecast that a bullish trend is not too far off.

"Gold demand is always cyclical."

Last year, overall supply was 2,500 tonnes compared to a demand of 4,300 tonnes giving a gap in demand of about 1,800 tonnes.

On gold activity in Malaysia, Cruikshanks said Malaysia is quite a success story in terms of world jewellery production.

"Malaysia is well-known as a fabrication centre which produced 91 tonnes last year out of which about 60 tonnes or 70 per cent are exported to countries in the Middle East, China, India and the US," he said.

Worldwide, 3,300 tonnes of gold was used in jewellery fabrication last year.

NST, 22.6.1998

SSPC gas field has full recovery under GRS

Sabah Shell Petroleum Company Ltd. (SSPC) said last Saturday that its gas reinjection scheme (GRS) is expected to have a recovery capacity of around 35 million standard barrels (mmstb) at its St. Joseph field operations in north Sabah waters.

The GRS scheme is the first major reservoir pressure maintenance scheme to optimise hydrocarbon recovery for Shell Malaysia's exploration and production (EP) sector, SSPC

said in a statement.

It said Sabah Shell was currently implementing the scheme with its joint venture partner Petronas Carigali Sdn. Bhd. as the reservoir pressure at St. Joseph had declined below its natural depletion pressure.

Production at St. Joseph was currently at 22,000 barrels of crude per day (bpd), which was assisted by gaslifting of some 95% of the wells.

NST, 29.6.1998

AN INTERNATIONAL CONFERENCE

Tectonics, Stratigraphy and Petroleum and Mineral Systems of Palawan, Borneo and Surrounding Areas

29 Nov – 3 Dec, 1999

CALL FOR PAPERS

Hosted by:

Comexco Incorporated
Geological Society of the Philippines
(GSP)

First Circular

ORAL AND POSTER PRESENTATION

Dates: 29 November – 1 December 1999

Venue: Asiaworld Resort Hotel
Puerto Princesa City
Palawan Island, Philippines

Technical Themes

- Tectonics and Structural Development
- Stratigraphic Sequences and Petroleum Reservoirs
- Geochemistry and Petroleum Source Rocks
- Mineral Exploration and Development
- Biostratigraphy, Geochronology and Volcanism

PLANNED FIELD TRIPS

Dates: 2–3 December 1999

- Ophiolites and Mineral Resources of Palawan
- Carbonates and Turbidites

(Field Lecturers — To Be Announced Later)

SUBMISSION INFORMATION

Authors are invited to submit new and original work for either oral or poster presentation.

Abstract Deadline: 1 March 1999

Authors will be informed of acceptance or rejection before 15 April 1999. Last day for submission of manuscripts in final form will be 1 August 1999.

Please observe the following guidelines:

1. Limit your Abstract to a maximum of 300 words.
2. Indicate whether you prefer an oral or poster presentation.
3. Clearly delineate the title, authors and their affiliations and indicate the speaker if not the first author.
4. Submit your Abstract by e-mail to **comexco@psdn.org.ph**, or by fax, to No. (632) 634-5490, or to any of the conference correspondents.
5. Copies of the proceedings containing the papers to be presented will be distributed to participants prior to the conference proper. Final manuscripts should be submitted on 3.5" diskettes. Text and tables should be typed using PC-based MS Word. Figures should be saved in separate files preferably in CorelDRAW 8 format or at least in "BMP", TIF or JPG formats.

BACKGROUND

The Conference:

This international conference is a follow-up to the international workshop "Tectonics, Stratigraphy and Petroleum Systems of Borneo" held in June 1997, and hosted by the Department of Petroleum Geoscience of Universiti Brunei Darussalam. This workshop was the first forum that specifically addressed the geology of Borneo and surrounding region. Fifty very interesting papers were presented in this workshop which was well attended by international delegates.

The Venue:

Puerto Princesa City is the capital of the island province of Palawan. The city is located approximately 600 kilometers southwest of Manila. Daily large jet flights from Manila to Puerto Princesa City take under an hour.

Palawan is popularly known for its world-class resorts, white sand beaches, virgin forests and crystal clear waters with pristine reefs and other colourful marine life. It is home to a rare collection of exotic animals. Several mineral deposits are found on the island. The most active oil exploration efforts in the Philippines are conducted offshore Palawan where the only commercial petroleum fields in the country are found.

For more information on Palawan, please visit their website at:

[//www.palawan.net./palaone/default.htm](http://www.palawan.net./palaone/default.htm)

FEES

	Before 1.8.99	After 1.8.99
Presenter (Oral and Poster)	US\$150.00	US\$225.00
Participant (Oral and Poster)	US\$250.00	US\$375.00
Student (Oran and Poster)	US\$30.00	US\$45.00
Field Trip	US\$100.00	US\$150.00

CONFERENCE CORRESPONDENTS

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COMEXCO, Incorporated
Unit 503, Amberland Plaza Bldg.
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KEYNOTE SPEAKERS

The organizing committee is currently in the process of inviting keynote speakers to address issues related to the technical themes of the conference.

THE CONFERENCE WILL BE HELD WITH THE ASSISTANCE OF:

- Office of the Governor of the Province of Palawan
- Office of the City Mayor of Puerto Princesa
- Palawan Institute of Petroleum, Palawan State University

FURTHER INFORMATION

Palawan '99 Secretariat
c/o COMEXCO, Incorporated,
Unit 503, Amberland Plaza Condominium
Julia Vargas Avenue
Ortigas Center
Pasig City 1604
Metro Manila
Philippines
Fax No. : 63-2-6345490
E-mail: comexco@psdn.org.ph

2nd Asian Symposium on Engineering Geology and the Environment

Engineering Geology

Planning for Sustainable Development

23–25 September 1999

Bangi, Malaysia



Organised by

**IAEG Malaysian National Group
Institute of Geology Malaysia**

In collaboration with

**Ministry of Science, Technology and the Environment
Geological Society of Malaysia
Institution of Engineers Malaysia
Institution of Mining and Metallurgy
Institute of Quarrying**

First Circular

Invitation

Society and its life-support systems are increasingly threatened by unsustainable forms of production and consumption. The goal of rapid economic growth in Asia has given rise to over exploitation of natural resources, ignorance of environmental degradation and in many instances, compromised the element of human safety.

Proper planning is integral to implement sound policies for environmental action and lay the foundation for sustainable development. Engineering Geology can contribute to planning for sustainable development by providing basic information on actual environmental conditions, forecasting future land degradation and advocating appropriate mitigating measures for long term human safety.

The IAEG Malaysian National Group invites engineering geologists, environmental geologists, engineers and scientists from related disciplines to attend and participate in the ongoing discussion on Engineering Geology-Planning for Sustainable Development during the 2nd Asian Symposium on Engineering Geology and the Environment. The Symposium will be held on 23–25 September 1999 in Bangi, Selangor D.E., Malaysia. It will highlight the

contribution of engineering geology to policy and decision making for sustainable development.

Objective

The objective of the Symposium is to bring together experts, practitioners and students of Engineering Geology and related fields in the Asian region to share knowledge and experience and to promote regional cooperation in planning for sustainable development.

Symposium Themes

- Site Investigation for Major Projects and Regional Planning
- Geohazard Prevention in Urban Centres
- Geological Inputs for Environmental Planning
- Sustainable Utilisation of Earth Resources
- Foundation Engineering in Problematic Terrain
- Engineering Geology in the Wet Tropics

Scientific Programme

The Symposium Programme will consist of invited keynote papers on the symposium themes and contributed papers. Satellite short courses will be offered and a technical exhibition is being planned. Participants will also go on a *technical tour* as part of the scientific programme.

Call for Papers

Original papers addressing the symposium themes are welcome. Abstracts of 400–500 words should be submitted to the secretariat by e-mail, facsimile or mail before 31 December 1998. Abstract submissions must indicate the relevant theme and should include the address, facsimile and e-mail of the authors.

Technical Exhibition

A comprehensive technical exhibition is planned for the Symposium. Exhibits will include Site Investigation equipment, specialized testing and monitoring equipment, computer hardware and software as well as engineering and geological services.

Post Symposium Tours

Tour of Sabah, East Malaysia

Aspects covered include landslides and mountain road construction. A climb up Mount Kinabalu will also be included.

Duration : 4 days & 3 nights

Cost : USD500 (includes transportation, food and lodging)

Tour of the East Coast, Peninsular Malaysia

Aspects covered include slope stability problems associated with mountain terrain,

intricate tunnel networks at the Pergau Dam and coastal erosion problems in the East Coast.

Duration : 4 days & 3 nights

Cost : USD250 (includes transportation, lunch and lodging)

Registration Fee

Registration before 30 April 1999 : USD250

Registration after 30 April 1999 : USD350

Accompanying Person : USD150

The registration fee covers teas, lunches, *technical tour* and symposium proceedings*

*Not included for accompanying person

Deadlines

Submission of Abstracts : 31 December 1998

Early Registration : 30 April 1999

Submission of Full Paper : 30 April 1999

Information

For more information, please contact:

Secretariat

2nd Asian Symposium on Engineering
Geology and the Environment,

Institute for Environment and Development
(LESTARI),

Universiti Kebangsaan Malaysia,
43600 Bangi, Selangor, MALAYSIA

Tel: 603-829 6135/36 Fax: 603-825 5104

E-mail: lestari@pkrisc.cc.ukm.my

KALENDAR (CALENDAR)

1998

July 4-11

PROCESSES OF CRUSTAL DIFFERENTIATION (Penrose Conference of the Geological Society of America), Verbania, Italy. (Contact: Tracy Rushmer, Department of Geology, University of Vermont, Burlington, VT 05405, USA. Tel: 1 802 656 8136; Fax: 1 802 656 0045; E-mail: trushmer@zoo.uvm.edu)

July 6-10

AUSTRALIAN GEOLOGICAL CONVENTION, Townsville, Australia. (Contact: Debbie Buckley, School of Earth Sciences, James Cook University, Townsville QLD 4811, Australia. Tel: 077 81 5047; Fax: 077 25 1501; E-mail: jcu.edu.au; WWW: <http://www.jcu.au/dept/Earth/I/AGC14.html>)

July 6-10

HYDROLOGY IN A CHANGING ENVIRONMENT (International Symposium of the British Hydrological Society), Exeter, UK. (Contact: Bruce Webb, Department of Geography, University of Exeter, Exeter, EX4 4RJ, UK. Fax: +44 (0) 13392 263342; E-mail: B.W. Webb@exeter.ac.uk)

July 8-10

GEOCONGRESS '98 (Conference of the Geological Society of South Africa), Pretoria, South Africa. (Contact: Tel: 27 12 8411167; Fax: 27 12 8411221; E-mail: eaucamp@geoscience.org.za)

July 8-17

CRYOSOLS (Congress of International Society of Soil Science), Montpellier, France. (Contact: Dr. D.A. Gilichinsky, Institute of Soil Science and Photosynthesis, Russian Academy of Sciences, 124292 Pushchino, Moscow region, Russia. E-mail: gilichin@issp.serpukhov.su)

July 11-17

IAVCEI INTERNATIONAL VOLCANOLOGICAL CONGRESS '98, Rondebosch, South Africa. (Contact: Secretariat, IAVCEI 1998, Dept. of Geological Sciences, University of Cape Town, Rondebosch,

South Africa. Fax: 27 21 650 3783; E-mail: ivec98@geology.uct.ac.za; WWW: <http://www.uct.ac.za/depts/geolsci/ivec98/>)

July 12-16

FUTURE GROUNDWATER RESOURCES AT RISK (FGR-98) (2nd International Conference), Changchun, China. (Contact: Dr. Zhao Yongsheng and Dr. Sui Weiguo, FGR '98 Conference Secretariat, P.O. Box 298, Changchun University of Earth Sciences, 6 Ximinzhu Street, Changchun, Jilin 130026, China. Fax: +86 431 892 8327)

July 15-22

IGCP PROJECT 420 WORKSHOP (Continental growth in the Phanerozoic: Evidence from East-Central Asia) (with field excursion in the Altai Mountains) Urumqi, China. (Contact: Prof. Hong Dawei, Institute of Geology, CAGS, 26 Baiwanzhuang Road, Beijing 10037, China. Tel: 86 10 6831 1133 ext. 2309; Fax: 86 10 6831 0894, or Prof. Bor-ming Jahn, Geosciences Rennes, Universite de Rennes 1, 35042 Rennes Cedex, France. Tel: 33-2-99 28 60 83; Fax: 33-2-99 28 67 72 or 33-2-99 28 67 80; E-mail: jahn@univ-rennes1.fr)

July 21-25

WESTERN PACIFIC GEOPHYSICS (Meeting), Taipei, Taiwan, China. (Contact: American Geophysical Union, Meetings Dept., 2000 Florida Ave., Washington, DC, USA; Tel: 1 202 462 6900; Fax: 1 202 328 0566; E-mail: meetinginfo@kosmos.agu.org; WWW: <http://www.agu.org>)

August

10TH IAGOD SYMPOSIUM, Broken Hill, Australia. (Contact: Prof. I.R. Plimer, University of Melbourne, Parkville, VIC 3052, Australia. Tel: 613 3446520; Fax: 613 3447761)

August

EUROCK '98 (ISRM Regional Symposium), "Rock Mechanics in Petroleum Engineering", Trondheim, Norway. (Contact: Prof. Rune M. Holt, Dept. of Petroleum Technology and Applied Geophysics, NTH, N-7034 Trondheim, Norway, Tel: +47 73 591187; Fax: +47 73 591102; E-mail: rune.holt@iku.sintef.no)

August 4-8

MODERN APPROACHES TO ORE AND ENVIRONMENTAL MINERALOGY, Ottawa and Guelph, Ontario, Canada. A Short Course sponsored by the Mineralogical Association of Canada, Natural Resources Canada, The Commission on Ore Mineralogy and the International Mineralogical Association. Limited registration as the course will focus on specialized laboratories available in the Booth Street area. (Contact: Louis, J. Cabri, CANMET, 555 Booth Street, Ottawa, Ontario, Canada, K1A 0G1. Tel: +1 613 995 4073; Fax: +1 613 996 9673; E-mail: lcabri@nrcan.gc.ca)

August 9-12

ENVIRONMENTAL GEOTECHNOLOGY (International Symposium), Boston, Massachusetts, USA. (Contact: H.I. Inyang, 4th International Geoenvironmental Symposium, CEEEST, James B. Francis College of Engineering, University of Massachusetts-Lowell. One University Ave., Lowell, MA 01854, USA. Tel: 1 508 934 2285; Fax: 1 508 934 3092; E-mail: inyangh@woods.uml.edu)

August 9-15

INTERNATIONAL MINERALOGICAL ASSOCIATION: IMA '98 (17th General Meeting), Toronto, Canada. (Prof. A.J. Naldrett, Department of Geology, University of Toronto, Canada M5S 3B1. Tel: (461) 978 3030; Fax: (416) 978 3938; E-mail: ima98@quartz.geology.utoronto.ca)

August 10-16

GENERATION AND EMPLACEMENT OF OPHIOLITES THROUGH TIME (International Symposium and Field Excursion), Oulo, Finland. (Contact: J. Vuollo, Department of Geology, University of Oulu, FIN-90570 Oulu, Finland. Fax: 358 81 5531 484; E-mail: vuollo@sveka oulu.fi)

August 15-20

HISTORY OF OCEANOGRAPHY (International Congress), Qingdao, China. (Contact: G.-K. Tan, First Institute of Oceanography, SOA, 3A Hongdao Nbranch Road, Qingdao 266003, China. Tel: 86 532 28883127; Fax: 86 532 2879562; E-mail: fiokjc@ns.qd.sd.cn)

August 17-19

GEOSEA '98 (Ninth Regional Congress on Geology, Mineral and Energy Resources of Southeast Asia), Kuala Lumpur, Malaysia. (Contact: The Organising Secretary, GEOSEA '98, Geological Society of Malaysia, c/o Department of Geology, University of Malaya, 50603 Kuala Lumpur, Malaysia. Tel: +(603) 757 7036; Fax: +(603) 759 3900; E-mail: geologi@po.jaring.my)

August 17-20

THE JURASSIC SYSTEM (5th International Symposium), Vancouver, Canada. (Contact: P.L. Smith, Earth and Ocean Science, University of British Columbia, 6339 Stores Rd., Vancouver, BC, V6T 1Z4 Canada. Tel: (604) 822-6456; Fax: (604) 822 6088; E-mail: psmith@cos.ubc.ca; WWW: <http://www.eos.ubc.ca/jurassic/announce.html>)

August 17-20

GLACIERS AND THE GLACIATED LANDSCAPE (International Symposium), Kiruna, Sweden. (Contact: Secretary General, International Glaciological Society, Lensfield Road, Cambridge CB2 1ER, UK. Tel: 44 1223 355974; Fax: 44 1223 336543; E-mail: 100751.1667@compuserve.com)

August 20-26

ICOG-9: GEOCHRONOLOGY, COSMOCHRONOLOGY AND ISOTOPE GEOLOGY (9th International Conference), Beijing, China. (Contact: ICOG-9 Secretariat, Chinese Academy of Sciences, 26 Baiwanzhuang Road, Beijing 100037, China. Tel: +86 10 68311545 or 68326456; Fax: +86 10 68311545)

August 20-26

CRYOSOLS AND THEIR RELATIONSHIP TO GLOBAL CLIMATE CHANGE (World Congress of Soil Science, Symposium 39), Montpellier, France. (Contact: Agropolis-Avenue, Agropolis-34394, Montpellier. Cedex 5, France. Tel: 33 6704 7538; Fax: 33 6704 7549)

August 23-28

PALEOCEANOGRAPHY (6th International Conference), Lisbon, Portugal. (Contact: Fatimá Abrantes, Assoc. Portuguesa de Paleocanografia, Apt. 7618 Alfragide, 2700 Amadora, Lisbon, Portugal. Tel: 351 1 346 3915; Fax: 351 1 342 4609; E-mail: icp6fatima@mail.telepac.pt)

August 24-25

SOCIETY FOR ORGANIC PETROLOGY (Annual Meeting), Halifax, Nova Scotia, Canada. (Contact: Prasanta K. Mukhopadhyay. Tel/Fax: 1 902 453 0061)

August 25-28

INTERNATIONAL SYMPOSIUM ON URBAN WATER RESOURCES IN THE 21ST CENTURY (ISUWR'98), Beijing, China. Sponsored by Beijing Association for Science & Technology. (Contact: Chinese Academy of Geological Sciences, 26 Baiwanzhuang Road, Beijing 100037, China. Tel/Fax: +86-10-6832 6186; E-mail: geophy@bj.col.com.cn)

August 30 - September 3

V.M. GOLDSCHMIDT CONFERENCE (8th Annual of The Geochemical Society), Toulouse, France. (Contact: E-mail: goldconf@lucid.upstlse.fr; WWW: <http://www.obs-mip.fr/omp/umr5563/goldconf98.html>)

August 30 - September 4

CLAY MINERALOGY AND PETROLOGY (International Conference and Workshop of IGCP Project No. 405), Brno, Czech Republic. (Contact: Petr Sulovsky, Dept. of Mineralogy, Petrology and Geochemistry, Faculty of Science, Masaryk University, Kotlarska 2, CZ 611 37 Brno, Czech Republic. Fax: 420 541211214; E-mail: clays@sci.muni.cz)

September

SEDIMENTARY ROCKS (International Symposium), Taipei, Taiwan, China. (Contact: Dr. Ou Chin Der, Director General, Taiwan Area National Expressway Engineering Bureau, Ministry of Transportation and Communications, Taipei Taiwan, China. Tel: +886 2 5156777; Fax: +886 2 5041281)

September 1-12

ANATOMY AND TEXTURES OF ORE-BEARING GRANITOIDS OF SIKHOTEALEIN (PRIMORYE REGION, RUSSIA) AND RELATED MINERALIZATION (Joint Field Conference of IAGOD, IGCP-373, SGA, and Russian Academy of Sciences), Vladivostok, Russia. (Contact: Dr. Galina Gonevchuk, Far East Geological Institute of FEB of Russian Academy of Sciences, 159, Prospect 100-letya, Vladivostok, 690022, Russia. Tel: 7 4232 318 750; Fax: 7 4232 31 78 47; E-mail:

feqi@online.marine.su; WWW: <http://www.immr.tu-clausthal.de/lager/announcement1.html>)

September 5-9

ANTARCTIC GLACIOLOGY, Lanzhou, China. (Contact: Secretary General of ISAG-6, Laboratory of Ice Core and Cold Regions Environment, Lanzhou Institute of Glaciology and Geocryology, CAS, Lanzhou 730000, China. Fax: 86 931 8885241; E-mail: icecore@ns.lzb.ac.cn)

September 5-14

INTERNATIONAL "THE GEOLOGY OF TODAY FOR TOMORROW" (Conference on radioactive waste disposal, protection of drinking water resources, integrated stratigraphy and sequence analysis. GIS in geology — on the occasion of the 150th anniversary of the Hungarian Geological Society), Budapest, Hungary. (Contact: Hungarian Geological Society, P.O. Box 433, H-1371 Budapest. Tel: (361) 251 0889; Fax: (361) 156 1215; E-mail: csaszar@mafi.hu)

September 6-11

EARTHQUAKE ENGINEERING (International Conference), Paris, France. (Contact: French Association for Earthquake Engineering, 4 Avenue du Recteur Poincare, 75782 Paris Cedex 16, France. WWW: <http://dfc2.enpc.fr/ecee11>)

September 6-16

DEPOSIT AND GEOENVIRONMENTAL MODELS FOR RESOURCE EXPLOITATION AND ENVIRONMENTAL SECURITY (International Conference of NATO Advanced Study Institute), Matrahaza, Hungary. (Contact: Dr. A.G. Fabbri, Intern. Inst. for Aerospace Survey & Earth Sciences (ITC). Hengelosestr 99, P.O. Box 6, 7500 AA Enschede. The Netherlands. Fax: 31-53-487-4336; E-mail: fabbri@itc.nl)

September 7-9

SEDIMENT TRANSPORT AND DEPOSITION BY PARTICULATE GRAVITY CURRENTS (Conference), Leeds, UK. (Contact: Ben Kneller, Earth Sciences Department, University of Leeds, Leeds, LS2 9JT, UK. Tel: +44 113 233 6625; Fax: +44 113 233 5259; E-mail: ben@earth.leeds.ac.uk; WWW: <http://earth.leeds.ac.uk/turbidites/conference/html>)

October 26-29

GEOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING, Toronto, Ontario, Canada. (Contact: GSA Meetings Department, P.O. Box 9140, Boulder CO, 80301 USA. Tel: +1 303 447 2020; Fax: +1 303 447 1133; E-mail: meetings@geosociety.org; WWW: <http://www.geosociety.org/meetings/index.htm>)

October 26-29

SOCIETY OF ECONOMIC GEOLOGISTS (Annual Meeting, with GSA), Toronto, Canada)

October/November

PHYSICAL, CHEMICAL AND BIOLOGICAL ASPECTS OF AQUIFER-STREAM SEDIMENT INTERRELATIONS (28th IAH Congress) (Contact: Dr. J. Rosenschein, USGS MS 414, National Center, Reston Va 22092, USA; Fax: 703 648 5722)

November 8-11

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS (International Conference and Exhibition), Rio de Janeiro, Brazil. (Contact: AAPG Conventions Department, P.O. Box 979, 1444 S Boulder Ave., Tulsa, OK 74101-0979, USA. Tel: +1 918 560 2679; Fax: +1 918 560 2684)

November 16-20

THIRTEEN SOUTHEAST ASIAN GEOTECHNICAL CONFERENCE (Conference), Taipei, Republic of China. (Contact: Dr. John Chien-Chung Li, Secretary General/SEAGC 13, c/o Public Construction Commission, Executive Yuan, Fl. 9, No. 4, Chung Hsiao West Road, Sec. 1, Taipei, Taiwan, Republic of China. Tel: 886-2-388-4962; Fax: 886-2-388-4959; E-mail: seagc13@mail.pcc.gov.tw)

December 1-3

ORIGIN OF THE EARTH AND MOON (International Conference of the Geochemical Society), Monterey, California, USA. (Contact: LeBecca Simmons, Lunar and Planetary Institute, 3600 Bay Area Boulevard, Houston TX 77058-1113, USA. Tel: 1 281 486 2158; Fax: 1 281 486 2160; E-mail: simmons@lpi.jsc.nasa.gov)

December 2-3

SEAPEX SILVER JUBILEE EXPLORATION CONFERENCE, Suntec City Exhibition Center, Singapore. (Contact: Mr. T.C. Chew, Southeast Asia Petroleum Exploration Society, P.O. Box

423 Tanglin Post Office, Singapore 812. Tel: (65) 338-9108; <http://web.singnet.com.sg/~seapex>)

December 6-10

AMERICAN GEOPHYSICAL UNION (Annual Fall Meeting), San Francisco, California, USA. (Contact: AGU Meetings Department, 1998 Fall Meeting 2000 Florida Avenue NW, Washington, DC 20009, USA. Tel: +1 202 462 6900 (in Washington, D.C. area and outside North America), or +1 800 966 2481 (toll-free in North America); Fax: +1 202 328 0566; E-mail: meetinginfo@kosmos.agu.org; WWW: <http://www.agu.org>)

1999**February 1-5**

SHALLOW TETHYS (International Symposium), Chiang Mai, Thailand. (Contact: Shallow Tethys 5 Symposium Secretary, Dept. of Geological Sciences, Chiang Mai University, Chiang Mai 50200, Thailand. Fax: 66 53 89 2261)

March 1-3

THIRTEENTH INTERNATIONAL CONFERENCE AND WORKSHOPS ON APPLIED GEOLOGIC REMOTE SENSING: Practical Solutions for Real-World Problems. Hotel Vancouver, Vancouver, British Columbia, Canada. Organized by ERIM with sponsors that include NASA, U.S. DOE Nevada Operations Office and Remote Sensing Lab, and USGS. (Contact: ERIM Geologic Conferences, Box 134001, Ann Arbor, MI 48113-4001 USA. Tel: +1 313 994 1200, ext. 3234; Fax: +1 313 994 5123; E-mail: wallman@erim.org)

March 1-4

SOCIETY FOR MINING, METALLURGY, AND EXPLORATION (Annual Meeting), Denver, Colorado, USA. (Contact: SME, 8307 Shaffer Parkway, P.O. Box 625002, Littleton, CO 80162-5002, USA. Tel: 1 303 973 9550; E-mail: smenet@aol.com)

March 9-11

INTERNATIONAL CONFERENCE ON PANGAEA AND THE PALEOZOIC-MESOZOIC TRANSITION, Wuhan, Hubei, China. (Contact: Dr. Tong Jinan, Faculty of Earth Science, China University of Geosciences, Wuhan, Hubei

August 24-25

SOCIETY FOR ORGANIC PETROLOGY (Annual Meeting), Halifax, Nova Scotia, Canada. (Contact: Prasanta K. Mukhopadhyay. Tel/Fax: 1 902 453 0061)

August 25-28

INTERNATIONAL SYMPOSIUM ON URBAN WATER RESOURCES IN THE 21ST CENTURY (ISUWR'98), Beijing, China. Sponsored by Beijing Association for Science & Technology. (Contact: Chinese Academy of Geological Sciences, 26 Baiwanzhuang Road, Beijing 100037, China. Tel/Fax: +86-10-6832 6186; E-mail: geophy@bj.col.com.cn)

August 30 - September 3

V.M. GOLDSCHMIDT CONFERENCE (8th Annual of The Geochemical Society), Toulouse, France. (Contact: E-mail: goldconf@lucid.ups-tlse.fr; WWW: <http://www.obs-mip.fr/omp/umr5563/goldconf98.html>)

August 30 - September 4

CLAY MINERALOGY AND PETROLOGY (International Conference and Workshop of IGCP Project No. 405), Brno, Czech Republic. (Contact: Petr Sulovsky, Dept. of Mineralogy, Petrology and Geochemistry, Faculty of Science, Masaryk University, Kotlarska 2, CZ 611 37 Brno, Czech Republic. Fax: 420 541211214; E-mail: clays@sci.muni.cz)

September

SEDIMENTARY ROCKS (International Symposium), Taipei, Taiwan, China. (Contact: Dr. Ou Chin Der, Director General, Taiwan Area National Expressway Engineering Bureau, Ministry of Transportation and Communications, Taipei Taiwan, China. Tel: +886 2 5156777; Fax: +886 2 5041281)

September 1-12

ANATOMY AND TEXTURES OF ORE-BEARING GRANITOIDS OF SIKHOTEALIN (PRIMORYE REGION, RUSSIA) AND RELATED MINERALIZATION (Joint Field Conference of IAGOD, IGCP-373, SGA, and Russian Academy of Sciences), Vladivostok, Russia. (Contact: Dr. Galina Gonevchuk, Far East Geological Institute of FEB of Russian Academy of Sciences, 159, Prospect 100-letya, Vladivostok, 690022, Russia. Tel: 7 4232 318 750; Fax: 7 4232 31 78 47; E-mail:

fegi@online.marine.su; WWW: <http://www.immr.tu-clausthal.de/lager/announcement1.html>)

September 5-9

ANTARCTIC GLACIOLOGY, Lanzhou, China. (Contact: Secretary General of ISAG-6, Laboratory of Ice Core and Cold Regions Environment, Lanzhou Institute of Glaciology and Geocryology, CAS, Lanzhou 730000, China. Fax: 86 931 8885241; E-mail: icecore@ns.lzb.ac.cn)

September 5-14

INTERNATIONAL "THE GEOLOGY OF TODAY FOR TOMORROW" (Conference on radioactive waste disposal, protection of drinking water resources, integrated stratigraphy and sequence analysis. GIS in geology — on the occasion of the 150th anniversary of the Hungarian Geological Society), Budapest, Hungary. (Contact: Hungarian Geological Society, P.O. Box 433, H-1371 Budapest. Tel: (361) 251 0889; Fax: (361) 156 1215; E-mail: csaszar@mafi.hu)

September 6-11

EARTHQUAKE ENGINEERING (International Conference), Paris, France. (Contact: French Association for Earthquake Engineering, 4 Avenue du Recteur Poincare, 75782 Paris Cedex 16, France. WWW: <http://dfc2.enpc.fr/ecee11>)

September 6-16

DEPOSIT AND GEOENVIRONMENTAL MODELS FOR RESOURCE EXPLOITATION AND ENVIRONMENTAL SECURITY (International Conference of NATO Advanced Study Institute), Matrahaza, Hungary. (Contact: Dr. A.G. Fabbri, Intern. Inst. for Aerospace Survey & Earth Sciences (ITC). Hengelosestr 99, P.O. Box 6, 7500 AA Enschede. The Netherlands. Fax: 31-53-487-4336; E-mail: fabbri@itc.nl)

September 7-9

SEDIMENT TRANSPORT AND DEPOSITION BY PARTICULATE GRAVITY CURRENTS (Conference), Leeds, UK. (Contact: Ben Kneller, Earth Sciences Department, University of Leeds, Leeds, LS2 9JT, UK. Tel: +44 113 233 6625; Fax: +44 113 233 5259; E-mail: ben@earth.leeds.ac.uk; WWW: <http://earth.leeds.ac.uk/turbidites/conference/html>)

September 7-10

DRINKING WATER CONTAMINATION (International Conference of International Association of Hydrological Sciences), Santiago, Chile. (Contact: Eric G. Reichard, U.S. Geological Survey, 5735 Kearny Villa Road, Ste. O. San Diego, California 92123, USA. Tel: 1 619 637 6834; Fax: 1 619 637 9201; E-mail: egreich@usgs.gov)

September 7-11

EARLY WARNING SYSTEMS FOR THE REDUCTION OF NATURAL DISASTERS (Conference), Potsdam, Germany. (Contact: E-mail: ewc98@gfz-potsdam.de)

September 7-14

INTERNATIONAL INHIGEO HISTORY OF GEOLOGY CONGRESS "From Folds to Nappes to Plates" "The History of Ideas About Glaciation", Neuchâtel, Switzerland. (Contact: Prof. Jean-Paul Schaer, Université de Neuchâtel, Institut de Géologie, Emile-Argand 11, 2007 Neuchâtel, Switzerland. Fax: 4132 7182601; E-mail: sabine.robert@geol.unine.ch)

September 8-10

COASTAL ENVIRONMENT 98 — ENVIRONMENTAL PROBLEMS IN COASTAL REGIONS (Conference), Cancun, Mexico. (Contact: Liz Kerr, Conference Secretariat, COASTAL ENVIRONMENT 98, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK. Tel: 44 (0) 1703 293223; Fax: 44 (0) 1703 292853; E-mail: liz@wessex.ac.uk; <http://www.wesses.ac.uk>)

September 9-11

REMOTE SENSING (Annual Conference, Natural Resource Institute and University of Greenwich), Kent, UK. (Contact: RSS98, School of Earth and Environmental Sciences, University of Greenwich, Medway Towns Campus, Chatham Maritime, Kent ME4 4AW, UK. Tel: 44 0181 3319803; Fax: 44 0181 3319805; E-mail: rrs98@gre.ac.uk)

September 10-20

IGCP PROJECT 367 (FINAL MEETING) AND INQUA SHORELINES AND NEOTECTONICS COMMISSIONS, Corinth and Samos, Greece. (Contact: Stathis Stiros, Inst. of Geology and Mineral Exploration, 70

Mesoghion St., Athens 11527, Greece. Tel: 30 1 771 5522; Fax: 30 1 775 2211; E-mail: stiros@prometheus.hol.gr or Paolo Antonio Pirazzoli, CNRS, URA 141-Lab de Géographie Physique, 1 Pl. Aristide Briand, 92190 Meudon-Bellevue, France. Tel: 33 1 4507 5558; Fax: 33 1 4507 5830; E-mail: pirazzol@cnsr-bellevue.fr)

September 11-14

ASSOCIATION OF EARTH SCIENCE EDITORS (32nd Annual), Council of Biology Editors, and Association of European Science Editors (Joint Meeting), Washington, DC, USA. (Contact: Arly Allen, Sheridan Electronic Systems, Suite 832, 400 E. Pratt St., Baltimore, MD 21202, USA. Fax: +1 410 347 1641; E-mail: aallen@ses.sheridan.com)

September 13-15

PETROLEUM GEOLOGY AND HYDROCARBON POTENTIAL (Conference), Neptune/Constanta, Romania. (Contact: Dr. Akif A. Narimanov, Azerbaijan Society of Petroleum Geologists. Tel: 0099412 92 3511; Fax: 0099412 92 3297; E-mail: Akifnar@Socar.baku.az)

September 13-17

ENVIRONMENTAL AND ENGINEERING GEOPHYSICS (4th International Conference), Barcelona, Spain. To receive the First Announcement sent E-mail request. (Contact: Lluis Rivero, Ass't of Applied Geophysics, Faculty of Geology, University of Barcelona, Barcelona 08071, Spain. Tel: 34-3-402.14.30; Fax: 34-3-402.13.40; E-mail: rivero@natura.geo.ub.es.)

September 14-17

MODERN EXPLORATION AND IMPROVED OIL AND GAS RECOVERY METHODS (2nd International Conference), Kraków, Poland. (Contact: DEXTER Congress and Symposium Bureau, Wroclawska 37A, 30-011 Kraków, Poland. Tel: 48 12 340 808; Fax: 48 12 336313; E-mail: kongresy@dexter.krakow.pl)

September 21-23

EPICONTINENTAL TRIASSIC (Symposium), Halle, Germany. (Contact: Gerhard Beutler, Institut für Geologische Wissenschaften und Geiseltalmuseum, Domstr. 5, D-06108 Halle/oale, Germany. Fax: 49 0 345 55 27 178)

September 21-25

INTERNATIONAL ASSOCIATION OF ENGINEERING GEOLOGY (8th International Congress), Vancouver, Canada. (Contact: Kim Meidal, Secretariat, 8th Congress IAEG, c/o BC Hydro, 6911 Southpoint Dr., Burnaby, BC V3N 4X8, Canada. Tel: 1 604 528 2421; Fax: 1 604 528 2558; E-mail: kim.meidal@bchydro.bc.ca; WWW: <http://www.bchydro.bc.ca/bchydro/IAEG/IAEG98.html>)

September 21-25

GROUNDWATER QUALITY (International Conference), Tübingen, Germany. (Contact: Conference Secretariat GQ '98, c/o Lehrstuhl für Angewandte Geologie, Sigwart-strasse 10, D-72076 Tübingen, Germany. Tel: 49 7071 2974692; Fax: 49 7071 5059; E-mail: mike.herbert@uni-tuebingen.de)

September 26-27

EVOLUTION OF STRUCTURES IN DEFORMING ROCKS, Canmore, Alberta, Canada. (Contact: Shoufa Lin, c/o Geological Survey of Canada, 601 Booth St., Ottawa, Ontario K1A 0E8, Canada. Fax: 1 613 995 7997; E-mail: slin@gsc.nrcan.gc.ca; WWW: <http://www.nrcan.gc.ca/ess/cgd/ctg98/>)

September 27 - October 2

GAMBLING WITH GROUND WATER: PHYSICAL, CHEMICAL AND BIOLOGICAL ASPECTS OF AQUIFER-STREAM INTERRELATIONS (28th Congress of the International Association of Hydrogeologists), Las Vegas, Nevada, USA. (Contact: John Van Brahana, IAH Las Vegas, USGS, 118 Ozark Hall, University of Arkansas, Fayetteville AR 72701, U.S.A. Tel: +1 501 575 2570; Fax: +1 501 575 3846; E-mail: jbrahana@jungle.uark.edu)

September 29-30

IMPROVING THE EXPLORATION PROCESS BY LEARNING FROM THE PAST, Haugesund, Norway. (Contact: Norwegian Petroleum Society, P.O. Box 1897 Vika, N-0124 Oslo, Norway; Fax: 47 22 55 46 30; E-mail: karin.haugness@npf.no)

September 30 - October 3

SOCIETY OF VERTEBRATE PALEONTOLOGY (Annual Meeting), Salt Lake City, Utah, USA. (Contact: SVP, 401 N. Michigan Ave., Chicago, IL 60611-4267, USA. Tel: 1 312 321 3708)

October 5-7

FIFTH INTERNATIONAL CONFERENCE ON REMOTE SENSING FOR MARINE AND COASTAL ENVIRONMENTS, San Diego Princess Convention Center, San Diego, California, USA. Organized by ERIM with sponsors that include NASA, NOAA/NESDIS, U.S. DOE Nevada Operations Office and Remote Sensing Lab., GER Corporation, RadarSat International, and National Wetlands Research Center. (Contact: ERIM Marine Conferences, Box 134001, Ann Arbor MI 48113-4001 USA. Tel: +1 313 994 1200, ext. 3234; Fax: +1 313 994 5123; E-mail wallman@erim.org)

October 5-9

INTERNATIONAL ASSOCIATION FOR MATHEMATICAL GEOLOGY (Annual Conference), Ischia Island, Naples, Italy. (Contact: Conference Secretariat, IAMG '98, c/o Antonella Buccianti, Dipartimento di Scienze della Terra, Università di Firenze, Via La Pira 4, 50121 - Firenze, Italy. Tel: +39 55 275 7496; Fax: +39 55 284 571; E-mail: buccianti@cesit1.unifi.it)

October 6-9

GERMAN GEOLOGICAL SOCIETY (150th Annual Meeting), Berlin, Germany. (Contact: Johannes Schroeder, Inst. für Angewandte Geowissenschaften II, Ernst-Reuter-Platz 1, D-10587 Berlin, Germany. Tel: 49 30 314 23650; Fax: 49 30 314 21107; E-mail: Geo-Berlin-98@tu-berlin.de)

October 7-9

COMPUTER SIMULATION IN RISK ANALYSIS AND HAZARD MITIGATION (International Conference), Valencia, Spain. (Contact: Paula Doughty-Young, RISK ANALYSIS '98 Conference Secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton SO40 7AA, UK. Fax: +44 1703 292 853; E-mail: paula@wessex.ac.uk)

October 19-21

WILLISTON BASIN SYMPOSIUM (8th International), Regina, Saskatchewan, Canada. (Contact: Dr. Dough Paterson, Saskatchewan Geological Society, P.O. Box 234, Regina, Saskatchewan, Canada S4P 2Z6. Tel: +1 306 787 2625; Fax: +1 306 787 4608; E-mail: dpaterson@gov.sk.ca; WWW: <http://www.gov.sk.ca/enemine/about/semnew.htm>)

October 26-29

GEOLOGICAL SOCIETY OF AMERICA ANNUAL MEETING, Toronto, Ontario, Canada. (Contact: GSA Meetings Department, P.O. Box 9140, Boulder CO, 80301 USA. Tel: +1 303 447 2020; Fax: +1 303 447 1133; E-mail: meetings@geosociety.org; WWW: <http://www.geosociety.org/meetings/index.htm>)

October 26-29

SOCIETY OF ECONOMIC GEOLOGISTS (Annual Meeting, with GSA), Toronto, Canada)

October/November

PHYSICAL, CHEMICAL AND BIOLOGICAL ASPECTS OF AQUIFER-STREAM SEDIMENT INTERRELATIONS (28th IAH Congress) (Contact: Dr. J. Rosenschein, USGS MS 414, National Center, Reston Va 22092, USA; Fax: 703 648 5722)

November 8-11

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS (International Conference and Exhibition), Rio de Janeiro, Brazil. (Contact: AAPG Conventions Department, P.O. Box 979, 1444 S Boulder Ave., Tulsa, OK 74101-0979, USA. Tel: +1 918 560 2679; Fax: +1 918 560 2684)

November 16-20

THIRTEEN SOUTHEAST ASIAN GEOTECHNICAL CONFERENCE (Conference), Taipei, Republic of China. (Contact: Dr. John Chien-Chung Li, Secretary General/SEAGC 13, c/o Public Construction Commission, Executive Yuan, Fl. 9, No. 4, Chung Hsiao West Road, Sec. 1, Taipei, Taiwan, Republic of China. Tel: 886-2-388-4962; Fax: 886-2-388-4959; E-mail: seagc13@mail.pcc.gov.tw)

December 1-3

ORIGIN OF THE EARTH AND MOON (International Conference of the Geochemical Society), Monterey, California, USA. (Contact: LeBecca Simmons, Lunar and Planetary Institute, 3600 Bay Area Boulevard, Houston TX 77058-1113, USA. Tel: 1 281 486 2158; Fax: 1 281 486 2160; E-mail: simmons@lpi.jsc.nasa.gov)

December 2-3

SEAPEX SILVER JUBILEE EXPLORATION CONFERENCE, Suntec City Exhibition Center, Singapore. (Contact: Mr. T.C. Chew, Southeast Asia Petroleum Exploration Society, P.O. Box

423 Tanglin Post Office, Singapore 812. Tel: (65) 338-9108; <http://web.singnet.com.sg/~seapex>)

December 6-10

AMERICAN GEOPHYSICAL UNION (Annual Fall Meeting), San Francisco, California, USA. (Contact: AGU Meetings Department, 1998 Fall Meeting 2000 Florida Avenue NW, Washington, DC 20009, USA. Tel: +1 202 462 6900 (in Washington, D.C. area and outside North America), or +1 800 966 2481 (toll-free in North America); Fax: +1 202 328 0566; E-mail: meetinginfo@kosmos.agu.org; WWW: <http://www.agu.org>)

1999**February 1-5**

SHALLOW TETHYS (International Symposium), Chiang Mai, Thailand. (Contact: Shallow Tethys 5 Symposium Secretary, Dept. of Geological Sciences, Chiang Mai University, Chiang Mai 50200, Thailand. Fax: 66 53 89 2261)

March 1-3

THIRTEENTH INTERNATIONAL CONFERENCE AND WORKSHOPS ON APPLIED GEOLOGIC REMOTE SENSING: Practical Solutions for Real-World Problems. Hotel Vancouver, Vancouver, British Columbia, Canada. Organized by ERIM with sponsors that include NASA, U.S. DOE Nevada Operations Office and Remote Sensing Lab, and USGS. (Contact: ERIM Geologic Conferences, Box 134001, Ann Arbor, MI 48113-4001 USA. Tel: +1 313 994 1200, ext. 3234; Fax: +1 313 994 5123; E-mail: wallman@erim.org)

March 1-4

SOCIETY FOR MINING, METALLURGY, AND EXPLORATION (Annual Meeting), Denver, Colorado, USA. (Contact: SME, 8307 Shaffer Parkway, P.O. Box 625002, Littleton, CO 80162-5002, USA. Tel: 1 303 973 9550; E-mail: smenet@aol.com)

March 9-11

INTERNATIONAL CONFERENCE ON PANGAEA AND THE PALEOZOIC-MESOZOIC TRANSITION, Wuhan, Hubei, China. (Contact: Dr. Tong Jinan, Faculty of Earth Science, China University of Geosciences, Wuhan, Hubei

430074, China. Tel: +86-27-7482031; Fax: +86-27-7801763; E-mail: jntong@dns.cug.edu.cn)

April 11-14

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS (Annual Meeting), San Antonio, Texas, USA. (Contact: AAPG Conventions Department, P.O. Box 979, 1444 S. Boulder Ave., Tulsa, OK 74101-0979, USA. Tel: +1 918 560 2679; Fax: +1 918 560 2684; E-mail: dkeim@aapg.org)

May 26-28

GEOLOGICAL ASSOCIATION OF CANADA-MINERALOGICAL ASSOCIATION OF CANADA, JOINT ANNUAL MEETING, Sudbury, Ontario. (Contact: Dr. P. Copper, Dept. of Earth Sciences, Laurentian University, Sudbury, Ontario P3E 2C6, Canada. Tel: (705) 657-1151 ext. 2267; Fax: (705) 675-4898; E-mail: gacmac99@nickel.laurentian.ca)

June

FOURTH INTERNATIONAL AIRBORNE REMOTE SENSING CONFERENCE AND EXHIBITION, Ottawa, Ontario, Canada. Organized by ERIM. (Contact: ERIM Airborne Conferences, Box 134001, Ann Arbor, MI 48113-4001 USA. Tel: +1 313 994 1200, ext. 3234; Fax: +1 313 994 5123; E-mail: wallman@erim.org)

June 7-11

EUROPEAN ASSOCIATION OF GEOSCIENTISTS AND ENGINEERS (EAGE, 61st Conference), Helsinki, Finland.

July 19-30

INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS, Birmingham, UK. (Contact: IUGG99, School of Earth Sciences, University of Birmingham, Edghaston, Birmingham B15 2TT, UK. Fax: 44 121 414 4942; E-mail: IUGG99@bham.ac.uk)

August 3-12

INTERNATIONAL UNION FOR QUATERNARY RESEARCH (INQUA) (15th Congress), "The Environmental Background to Hominid Evolution in Africa", Durban, South Africa. (Contact: Dr. D. Margaret Avery, INQUA XV CONGRESS, P.O. Box 61, South Africa Museum, Capetown 8000, South Africa. Tel: +27 21 243 330; Fax: +27 21 246 716; E-mail: mavery@samuseum.ac.za; WWW: <http://inqua.geoscience.org.za>)

August 4-12

AFRICA, CRADLE OF HUMAN KIN DURING THE QUATERNARY (XV INQUA Congress), Durban, South Africa. (Contact: Prof. T.C. Partridge, Climatology Research Center, University of Witwatersrand, 13 Cluny Rd., Forest Town, Johannesburg 2193, South Africa. Tel: +27 11 646 3324; Fax: +27 11 486 1689; E-mail: 141tcp@cosmos.wits.ac.za)

August 14-25

CARBONIFEROUS-PERMIAN (XIV International Congress), Calgary, Alberta, Canada. (Contact: Dr. Charles Henderson, Associate Professor, Department of Geology and Geophysics, The University of Calgary, N.W. Calgary, Alberta, Canada T2N 1N4. Tel: 403 220 6170; Fax: 403 285 0074; E-mail: henderson@geo.ucalgary.ca)

August 22-25

SOCIETY FOR GEOLOGY APPLIED TO MINERAL DEPOSITS (SGA) (5th Biennial Meeting), "Mineral Deposits: Processes to Processing," London, UK. Imperial College Natural History Museum. (Contact: Dr. Chris Stanley, Department of Mineralogy, Natural History Museum, Cromwell Road, London, SW7 5BD, UK. Tel: +44 171 938 9361; Fax: +44 171 938 9268; E-mail: cjs@nhm.ac.uk)

September

THE CONTINENTAL PERMIAN OF THE SOUTHERN ALPS AND SARDINIA (ITALY): Regional reports and general correlations (International Field Conference), Brescia, Italy. (Contact: Prof. G. Cassinis, Dipartimento di Scienze della Terra, Università di Pavia, Via Ferrata, 1, I-27100 Pavia, Italy. Tel: 39 382 505834; Fax: 39 382 505890; E-mail: cassinis@ipv36.unipv.it)

September

INTERNATIONAL ASSOCIATION OF HYDROGEOLOGISTS (29th Congress), Bratislava, Slovakia. (Contact: Prof. L. Melioris, Comenius University, Mylinska Dolina, 84215 Bratislava, Slovakia. Tel/Fax: +42 7 725 446; E-mail: podzvody@fns.uniba.sk)

September

INTERNATIONAL SOCIETY OF ROCK MECHANICS (9th International Congress), Paris, France. (Contact: Dr. S. Gentier,

Secrétaire Général du CFMR, BRGM/DR/GGP,
Avenue Claude Guillemin, B.P. 6009, F-45060
Orléans Cedex 2, France. Tel: +33 2 38 64 38 77;
Fax: +33 2 38 64 30 62)

September 12-15

*AMERICAN ASSOCIATION OF PETROLEUM
GEOLOGISTS* (International Meeting),
Birmingham, UK. (Contact: AAPG Conventions
Dept., P.O. Box 979, Tulsa, OK 74101-0979,
USA. Tel: 1 918 560 2679; Fax: 1 918 560 2684)

October 25-28

GEOLOGICAL SOCIETY OF AMERICA
(Annual Meeting), Denver, Colorado, USA.
(Contact: GSA Meetings Dept., P.O. Box 9140,
Boulder, CO 80301-9140, USA. Tel: +1 303 447
2020; Fax: +1 303 447 1133; E-mail:
meetings@geosociety.org; WWW: [http://
www.geosociety.org/meetings/index.htm](http://www.geosociety.org/meetings/index.htm))

October 30 - November 4

SOIL SCIENCE SOCIETY OF AMERICA
(Annual Meeting), Salt Lake City, Utah, USA.
(Contact: SSSA, 677 So, Segoe Rd., Madison,
WI 53711, USA. Tel: 1 608 273 8090; Fax: 1 608
273 2021; E-mail: rbarnes@agronomy.org)

2000

March 6-9

*SOCIETY FOR MINING, METALLURGY,
AND EXPLORATION* (Annual Meeting), Salt
Lake City, Utah, USA. (Contact: SME, 8307
Shaffer Parkway, P.O. Box 625002, Littleton,
CO 80162-5002, USA. Tel: 1 303 973 9550; E-
mail: smenet@aol.com)

August 6-17

*31ST INTERNATIONAL GEOLOGICAL
CONGRESS*, Rio de Janeiro, Brazil. Theme of
the Congress: Geology and Sustainable
Development: Challenges for the Third
Millennium. (Contact: Prof. Hernani Chaves,
President of the Preparatory Commission for
the 31st IGC, Ave. Pasteur, 404, Urca: Cep
22290-204, Rio de Janeiro, Brazil. Tel: +55 21
295 5337; Fax: +55 21 542 3647; E-mail:
Hernani@uerj.br)

October

*INTERNATIONAL MILLENIUM CONGRESS
ON GEOENGINEERING*, Melbourne,
Australia. (More information soon)

November 13-16

GEOLOGICAL SOCIETY OF AMERICA
(Annual Meeting), Reno, Nevada, USA.
(Contact: GSA Meetings Dept., P.O. Box 9140,
Boulder, CO 80301-9140, USA. Tel: +1 303 447
2020; Fax: +1 303 447 1133; E-mail:
meetings@geosociety.org; WWW: [http://
www.geosociety.org/meetings/index.htm](http://www.geosociety.org/meetings/index.htm))

2001

June 3-6

*AMERICAN ASSOCIATION OF PETROLEUM
GEOLOGISTS* (Annual Meeting), Denver,
Colorado, USA. (Contact: AAPG Conventions
Department, P.O. Box 979, 1444 S. Boulder
Ave., Tulsa, OK 74101-0979, USA. Tel: +1 918
560 2679; Fax: +1 918 560 2684; E-mail:
dkeim@aapg.org)

November 5-8

GEOLOGICAL SOCIETY OF AMERICA
(Annual Meeting), Boston, Massachusetts, USA.
(Contact: GSA Meetings Dept., P.O. Box 9140,
Boulder, CO 80301-9140, USA; Tel: +1 303 447
2020; Fax: +1 303 447 1133; E-mail:
meetings@geosociety.org; WWW: [http://
www.geosociety.org/meetings/index.htm](http://www.geosociety.org/meetings/index.htm))

2002

March 10-13

*AMERICAN ASSOCIATION OF PETROLEUM
GEOLOGISTS* (Annual Meeting), Houston,
Texas, USA. (Contact: AAPG Conventions
Department, P.O. Box 979, 1444 S. Boulder
Ave., Tulsa, OK 74101-0979, USA. Tel: +1 918
560 2679; Fax: +1 918 560 2684; E-mail:
dkeim@aapg.org)

October 28-31

GEOLOGICAL SOCIETY OF AMERICA
(Annual Meeting), Denver, Colorado, USA.
(Contact: GSA Meetings Dept., P.O. Box 9140,
Boulder, CO 80301-9140, USA; Tel: +1 303 447
2020; Fax: +1 303 447 1133; E-mail:
meetings@geosociety.org; WWW: [http://
www.geosociety.org/meetings/index.htm](http://www.geosociety.org/meetings/index.htm))

GEOLOGICAL SOCIETY OF MALAYSIA PUBLICATIONS

- Bulletin 1** (Feb 1968). 79 p. Studies in Malaysian Geology. Edited by P.H. Stauffer. A collection of papers presented at a meeting of the Geological Society on 31st January 1967. **Out of Stock.**
- Bulletin 2** (Dec 1968). 152 p. Bibliography and Index of the Geology of West Malaysia and Singapore by D.J. Gobbett. Price: RM5.00.
- Bulletin 3** (Mar 1970). 146 p. Papers in Geomorphology and Stratigraphy (with Bibliography supplement). Edited by P.H. Stauffer. Price: RM5.00.
- Bulletin 4** (Jun 1971). 100 p. Papers in Petrology, Structure and Economic Geology. Edited by P.H. Stauffer. Price: RM5.00.
- Bulletin 5** (Feb 1973). 70 p. The Search for Tungsten Deposits by K.F.G. Hosking. Price: RM5.00.
- Bulletin 6** (Jul 1973). 334 p. Proceedings, Regional Conference on the Geology of Southeast Asia. A collection of papers, Kuala Lumpur, March, 1972. Edited by B.K. Tan. Price: RM5.00.
- Bulletin 7** (Jun 1974). 138 p. A collection of papers on geology. Edited by B.K. Tan. Price: RM5.00.
- Bulletin 8** (Dec 1977). 158 p. A collection of papers on geology. Edited by T.T. Khoo. Price: RM5.00.
- Bulletin 9** (Nov 1977). 277 p. The relations between granitoids and associated ore deposits of the Circum-Pacific region. A collection of papers presented at the IGCP Circum-Pacific Plutonism Project Fifth Meeting. 12-13 November 1975, Kuala Lumpur. Edited by J.A. Roddick & T.T. Khoo. **Out of stock.**
- Bulletin 10** (Dec 1978). 95 p. A collection of papers on the geology of Southeast Asia. Edited by C.H. Yeap. **Out of stock.**
- Bulletin 11** (Dec 1979). 393 p. Geology of Tin Deposits. A collection of papers presented at the International Symposium of 'Geology of Tin Deposits', 23-25 March 1978, Kuala Lumpur. Edited by C.H. Yeap. Price: RM20.00.
- Bulletin 12** (Aug 1980). 86 p. A collection of papers on geology. Edited by G.H. Teh. **Out of stock.**
- Bulletin 13** (Dec 1980). 111 p. A collection of papers on geology of Malaysia and Thailand. Edited by G.H. Teh. Price: RM5.00.
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