

## 2008: Planet Earth

"It is with great pleasure that I can announce the decision by the General Assembly of the United Nations to proclaim 2008 as the International Year of the Planet Earth. On the 22<sup>nd</sup> of December the UN General Assembly adopted by consensus a Resolution by the United Republic of Tanzania and co-signed by 82 nations, to proclaim 2008 as the UN Year of Planet Earth," says Eduardo F.J. de Mulder, Chair Management Team of the International Year of Planet Earth.

The press release issued by the UN after adoption of the Resolution, reads as follows:

"By a draft on the International Year of Planet Earth, 2008, which the Committee approved without a vote on 11 November, the Assembly would declare 2008 the International Year of Planet Earth. It would also designate the United Nations Educational, Scientific and Cultural Organization (UNESCO) to organize activities to be undertaken during the Year, in collaboration with UNEP and other relevant United Nations bodies, the Inter-

national Union of Geological Sciences and other Earth sciences societies and groups throughout the world. Also by that draft, the Assembly would encourage Member States, the United Nations system and other actors to use the Year to increase awareness of the importance of Earth sciences in achieving sustainable development and promoting local, national, regional and international action."

"The Committee, to which the Press Release refers, is the Second Committee of the UN General Assembly where the International Year was discussed in two terms and approved before it was brought in the Plenary Session of the General Assembly. In fact, the International Year of Planet Earth will be a triennium, starting in 2007 and closing by the end of 2009, with the UN Year of Planet Earth 2008 in the centre," says Eduardo F.J. de Mulder.

For additional information:  
<http://www.esfs.org/>



The United Nations did in December declare 2008 as the UN Year of Planet Earth. The Year's purpose is, among other matters, to "discover new natural resources and make them available in a sustainable manner, enhance understanding of the occurrence of natural resources so as to contribute to efforts to reduce political tension increase interest in the Earth sciences in society at large and encourage more young people to study Earth science in university."

## Sound of Geology; International Workshop in Bergen, 26.-28. April 2006



Per Avseth, Norsk Hydro, heads up the organizing committee.

As postulated by Erasmus Montanus, the well-educated fictive character of the famous Bergen author Ludvig Holberg, "stones cannot fly!" True, but they can sing! No, we are not talking about Rolling Stones.

The technology of artificially produced seismic sound waves propagating through the earth have recently advanced to the level that allows geophysicists to derive not only structural images, but also rock and fluid properties from seismic signals. *Sound of Geology* is an upcoming international scientific workshop, which aims at strengthening the link between geophysics and geology within petroleum exploration technology and reservoir characterization.

An increasing global demand for oil and gas has turned exploration into a very important scientific topic. The persistent high oil price opens up for practical application of recently developed (and expensive) seismic and electromagnetic acquisition, processing and interpretation techniques. Conventional exploration technologies and cultures are challenged, and the scene for development of new methods is wide and open. At this workshop we will discuss integration methods, specifically how geological processes like deposition and compaction (mechanical and

chemical) control the volumetric and seismic properties of sedimentary rocks. The field of rock physics plays an essential role during the quantification of geology from seismic data, and thus will be the red thread of this workshop.

Several international capacities within the fields of sedimentology, diagenesis, rock physics and seismic data analysis have been invited to present the current status of research and technology in academia and oil industry. The workshop, which is organized by CIPR, Norsk Hydro and Statoil, has been advertised in leading scientific journals including in GEO ExPro, and tens of scientists, practitioners and students from all over the world have submitted their contributions. Around 100 participants will meet in downtown beautiful Bergen for 3 days at the end of April (26.-28.). The social program will include an ice-breaker at the workshop venue, Royal SAS Bryggen Hotel, as well as a culinary dinner at the famous mountain restaurant on Fløyen.

People who are interested in joining this workshop can register via the following website: [www.soundofgeology.info](http://www.soundofgeology.info). With limited space, it is first come first serve, so do not hesitate.

Per Avseth

# Software for the Asset Team

The new Houston-based company 3GiG has developed a software product which will help asset teams to store, track and manage prospect information, from the initial lead to the final plugging and abandonment of a well and beyond.



3GiG's multidisciplinary team Andrea Gallagher (Project Manager), Eric Williams (VP research and development), Kandy Lukats (President and CEO) and Tim Altum (Founder) test the new version of Prospect Director.

Multidisciplinary asset teams are very important in the search for hydrocarbons. But can every member of your team access all the relevant information on a prospect, without being swamped with unnecessary data? Can they retrieve everything they need without replicating tasks? And what happens to all that data after prospect evaluation?

Kandy Lukats, President of 3GiG, became aware of the importance of the workflow process in prospect management as Managing Consultant and then Vice President of Exploration and Development Systems at Landmark Graphics. In these positions she helped clients understand the issues in their business processes and how to apply technology to solve them. She found that companies all had similar concerns in the area of prospect management.

"Talking to the industry, as I was, it became apparent that companies had no real way of managing or storing exploration or development leads and prospects," Kandy explains. "Oil and gas executives were constantly frustrated by the loss of ideas and drillable prospects

from their company through the movement of staff. They needed a solution that would allow the individual asset team members to streamline their work processes and cut cycle time on well approval, but which would also allow the enterprise to store and retrieve ideas. These prospects represent the intellectual property of an oil company and they were constantly disappearing."

Eventually, Kandy moved from Landmark so she could concentrate on resolving these issues. She partnered with geologist Tim Altum, who had developed a prototype prospect management system for Devon Energy, which he felt could fill this niche. In 2003 he founded 3GiG with Eric Williams and a software development team, with the purpose of developing the product further. Kandy joined them in 2005 as President and together they are intent on proving that this is the product the industry has been waiting for!

Their software, Prospect Director, is a web-based product which "goes from lead generation, through prospect development to well planning and drill-

ing. It follows through completion, production, workover and recompletion, right through to plugging and abandoning the well. It was designed in collaboration with asset teams and business unit managers to meet their needs"

"We believe that if you work with the people who need the product, you get the best results, says Kandy. "So by talking extensively with asset teams we discovered which parts of the prospect management process are common and which are unique to each company, and have designed the product around that. It is then easily customised to meet a client's specific requirements: effectively, it 'thinks like the asset team.'" The aim is to enhance the prospecting efficiency of an organisation through increased productivity by removing repetition, automating the business process and reducing cycle time.

Kandy feels that the real importance of the product will be seen in the future. "Its true value lies in the ability to perpetually store information on leads, prospects and wells from any application. As the search for oil gets more and more intense, we will be going back to these old leads, and easy access to the data previously generated will be imperative."

Kandy is asked where the brief but snappy name of their company comes from – something to do with saving gigabytes of information perhaps? She laughs. "Well, it should be that, shouldn't it? Three guys started the company from their homes – so actually it stands for "3 Guys in a Garage!"

Jane Whaley

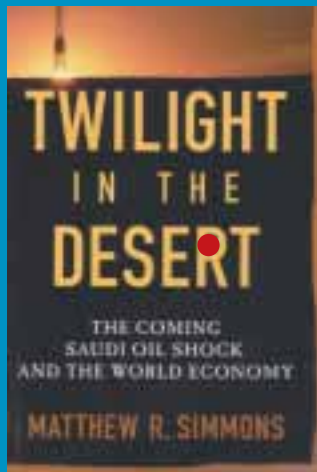
## 2006 Field Trips



For information and registration:  
[www.geoaktuelt.no](http://www.geoaktuelt.no) or  
[www.geoexpro.com](http://www.geoexpro.com)

# Will there be a Saudi oil shock to shake the World economy?

"Twilight in the desert" by Matthew R. Simmons



John Wiley & Sons, Inc., Hoboken  
New Jersey, 422pp. (2005)  
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ISBN-10: 0-471-73876-X

Matthew R. Simmons' name is closely affiliated with the term "Peak Oil". However, he was not the first oil man to point to the fact that oil and gas are limited and non-renewable natural resources, implying that sooner or later the production rate will erode, creating a peak in the production profile. Rather, it was Michael T. Halbouty who pointed to that such a development was probable for the United States oil production, and he became famous for his very precise prediction of when this was going to happen, namely in the mid 1950s.

But few would argue against the fact that Simmons has contributed strongly to make the concept of "Peak Oil" a focus of a hot debate about the future global oil production profile to such a degree that the petroleum community to some extent is divided into two camps. Simmons himself claims that the geologists dominate the group of those who accept the "Peak oil"-concept, whereas economists tend to take the opposite standpoint. His recent book

"Twilight in the Desert. The coming Saudi Oil Shock and the World Economy" intends to expand on this view.

In recent presentations, Matthew R. Simmons has been careful to emphasize that his present view on the "Peak Oil"-concept does not imply that there is a present oil crisis. Neither does it mean that the World is running out of oil in the near future. Instead, there is an imbalance between the production and the increasing demand related to the rapid growth of the Chinese and Indian economies. "Twilight in the Desert" points to what Simmons estimates to be one of the great unknowns in this calculation, the robustness of the future production profiles of the Saudi Arabian supergiants.

The reasoning is built on some very basic observations:

- The Saudi contribution to the total World oil production – 13 per cent – is significant. This production has leaned, and continues to lean, heavily on only four supergiants (the Ghawar, Safanya, Abqaiq and Berri fields; all carbonate reservoirs), that yield approximately 80 per cent of the total. These fields are old. They were discovered between 1947 and 1963 and all reached their peak production between 1973 and 1981.
- The supergiants have been heavily exploited because they have been the key elements in the role as swing-producer that has been taken on by Saudi Arabia to maintain a relatively stable international oil market in periods of emerging crises in oil supply. According to Simmons, this has been done simply by opening and closing valves in existing wells. This could be done

because of the extremely good reservoir properties of these fields and, in particular, the existence of sub-horizontal zones of extreme permeability, so-called super-K zones. These make the reservoirs handy for swing production, but is also their Achilles heel: A water breakthrough into the high-K zones would be catastrophic.

- An abrupt decrease in the production rate of any of the supergiants would immediately give dramatic effects in the international oil market, and probably cause waves in the World economy.

According to Simmons, the risk that this could happen in the relatively near future should raise concern. This opinion is supported by documentation that world-class reservoir management systems and expertise is, and has for a long time been, available to Saudi petroleum community. Hence, the properties of the reservoirs are well described and their behavior is analyzed by the use of state-of-the-art modeling tools. This implies that there is probably no potential to enhance the present and future production by the introduction of methods and technology that are available today.

Simmons includes in his analysis a technical evaluation of the total petroleum resources of Saudi Arabia as well as an assessment of its future exploration potential. He goes into great detail and depth in his descriptions of all the major fields and their history, and even includes a chapter on reservoir geology to make his technical assessments accessible for the non-geologist. There are also useful listings of data and a description of the met-

hods used. His observations are well documented: The reference list includes more than 200 references to technical publications, mainly SPE-reports.

But the book offers more than a technical assessment of the Saudi petroleum potential and its risks. It also gives the reader a condensed overview of the history of Saudi Arabia as a developing country with an extreme dependence on its petroleum resources. Saudi Aramco is, of course, given a chapter of its own. The book also gives some glimpses into the Saudi role in the international political picture.

In conclusion, "Twilight in the Desert. The coming Saudi Oil Shock and the World Economy" gives a unique view of the future of world petroleum resources. It is unusually well documented for a book of its genre and therefore gives the reader an opportunity to draw her own conclusions. Simmons has paid a price for his ambition to make the book "the full story", though. This has caused the text to lose its fluency in places. Also, the text may seem a little unbalanced when it comes to the historical and technical perspectives. Some readers may also be annoyed by its repetitiveness.

But overall, it is very clear that Simmons' willingness to share his knowledge about the Saudi oil industry has resulted in a book worth reading for anyone who is interested in the future global energy situation. And this is completely independent with respect to whether one shares the view on Simmons' "Peak Oil"-concept or not.

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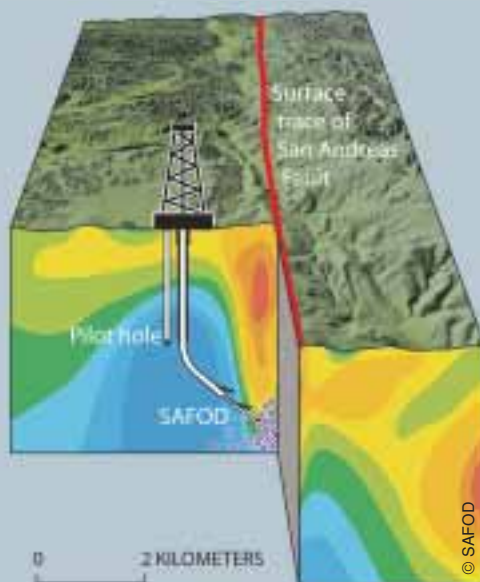
# April 18 1906

We are soon approaching the 100th anniversary, to the day, of the San Francisco earthquake. In the early morning of April 18, 1906 the town was almost totally ruined. First was the tremor, lasting less than a minute. Then came the fire, with its severe impact. The earthquake and fire took almost 1000 lives, and millions of dollars worth of damage in California. The earthquake and fire would go down as one of the worst natural disasters to hit a major city in United States history.

The earthquake has been estimated to approximately 7.8 on the Richter Scale.

Due to several other earthquakes that have occurred worldwide lately, the interest in research that aims to predict earthquakes is greater than ever before. This is largely the reason behind the drilling of a spectacular, deviated well to more than 3000 m at Parkfield, California. This is in fact the very first time anyone has been drilling into a fault along a plate-boundary with the purpose of acquiring scientific data.

The drilling operations were completed August 28, 2005 after drilling to 3072 m true vertical depth. The well will be continued in 2007 with coring in multi-lateral wells.



This project, run by SAFOD – San Andreas Fault Observatory at Depth – is motivated by the need to answer fundamental questions about the physical and chemical processes controlling faulting and earthquake generation within a major plate-bounding fault. The well was targeting a microearthquake zone, and the drilling location is spot on the vertical plate boundary at the extreme northern end of the rupture zone of the 1966 earthquake that measured 6 on the Richter Scale).

The San Andreas Fault stretches

for some 1,300 km through California and goes down to a depth of 15 km into the earth's crust. The fault, a right-lateral strike-slip fault, marks a transform boundary between the Pacific Plate (moving southeast) and the North American Plate (moving northwest). In 1906 the fault was blamed for the destructions, but it had moved only some few meters. It has, however, been active for 15-20 million years, and the total relative movement is more than 500 km.



The drilling takes place in Parkfield, California.



The San Francisco earthquake had its epicenter just outside town, but the crust ruptured both north and south of the town.

Cenozoicum	Quaternary	1.8
	Tertiary	65
Mesozoicum	Cretaceous	142
	Jurassic	205
	Triassic	248
	Permian	290
Phanerozoicum	Carboniferous	354
	Devonian	417
	Silurian	443
	Ordovician	495
	Cambrian	545
Precambrian	Neoproterozoicum	600
	Ediacaran	