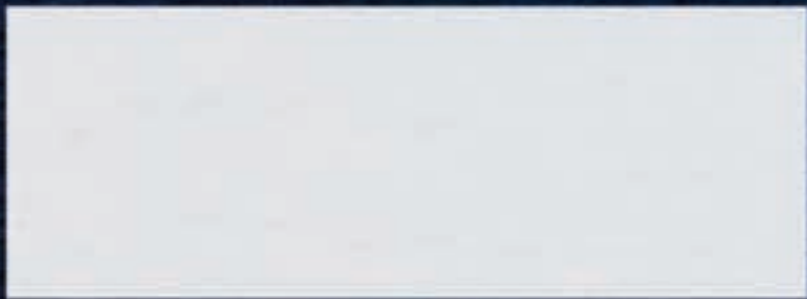


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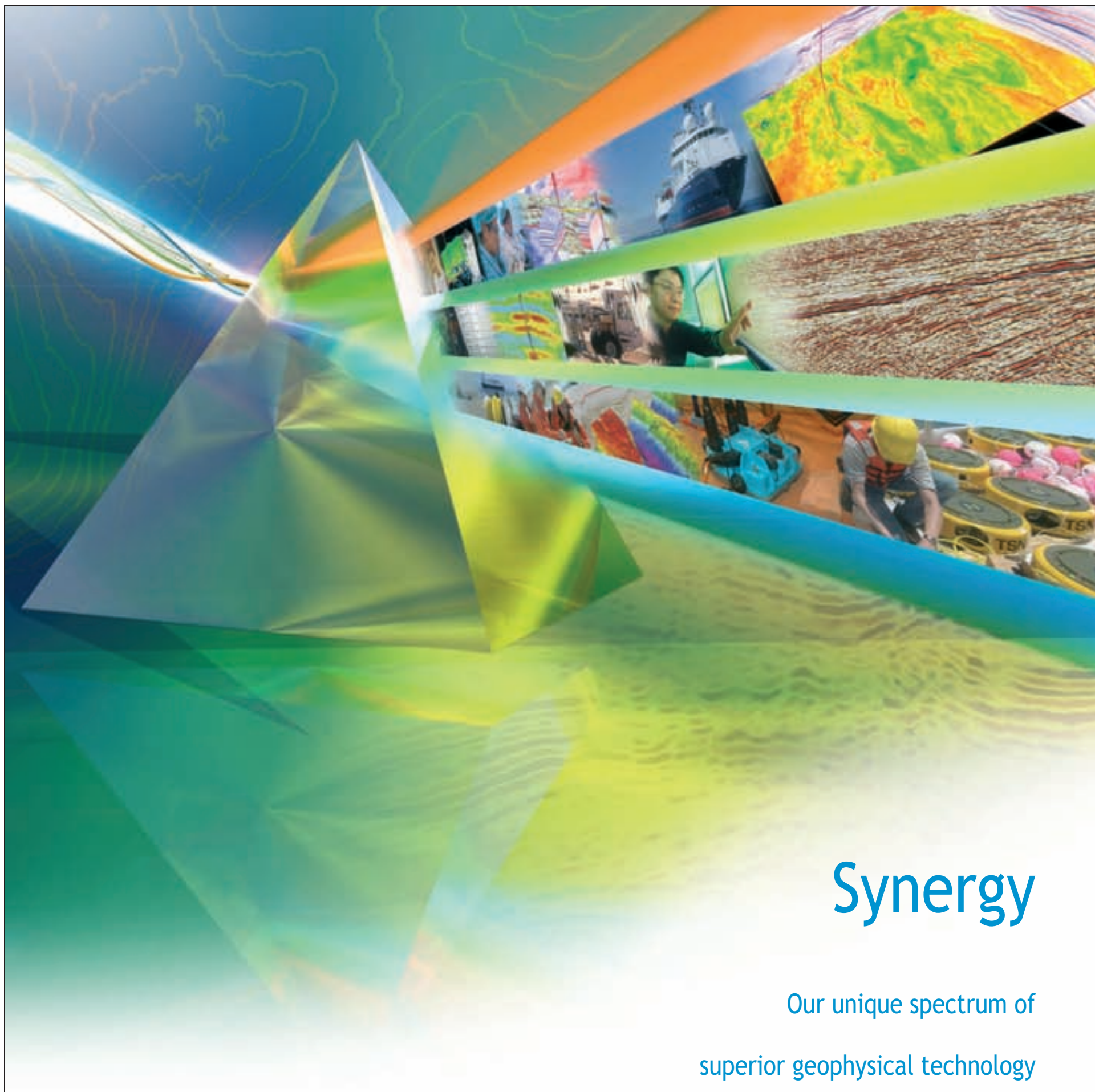
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2007



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On the cover: A beautiful picture for a beautiful play. The Gulf of Mexico – both onshore and, in increasingly deeper and deeper waters, offshore – continues to be the defining story for U.S. exploration. This month's EXPLORER, featuring our annual Gulf Coast editorial emphasis, offers a variety of stories of the region that paint a picture of challenges and success. The cover shot, incidentally, is of Apache's Tarantula Field, located at South Timbalier 308, courtesy of Apache Corp.

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Photo by Neil Wicker

It looks deserted here, but this area of the South Carolina coast provides the setting for one of AAPG's most popular field seminars: "Modern Terrigenous Clastic Depositional Environments." You say you want details? They're coming, in the 2008 AAPG education catalog, which will be part of the November EXPLORER. For now, watch for education department updates online at www.aapg.org.

PRESIDENT'S COLUMN

AAPG Addressing Manpower Needs

By WILLARD "Will" GREEN

World consumption of energy derived from fossil fuels is at an all-time high and continues to increase, although at a slower rate. The future supply of energy is critical for economic vitality and security worldwide.

To assure that the future energy supply will be sufficient to meet the needs of the increasingly industrialized world, more well-educated and trained geologists, geophysicists and engineers are needed.

The U.S. Department of Labor estimates that over one-half of the U.S. technical work force will retire in the next 15 years – a critical loss in work force. Currently a significant shortage of petroleum geoscientists exists in North America and western Europe, but shortages also have been reported in India and Southeast Asia.

Enrollment in geosciences and petroleum engineering is increasing. For example, the number of undergraduate students studying petroleum engineering at Texas A&M University, one of the largest petroleum engineering schools in the United States, has increased from 191 in 2001 to 507 in 2006, including a new satellite campus in Qatar.

But will the current increasing enrollment be enough to supply work force needs accelerated by increasing demand for energy and the looming wave of retirements?

What is AAPG currently doing to attract, assist and encourage students in

geosciences?

✓ AAPG, through its local affiliated societies, encourages students in elementary through high schools to take scientific and technical classes. It's important to interest young students in geoscience before they enter a college or university.



Green

Many local societies participate in the Earth Science Week program (Oct. 14-20), developed by the American Geological Institute. This year the West Texas Geological Society, my home society, will send volunteers into 50 elementary schools to give geoscience talks to fourth through sixth grade students.

✓ The AAPG Sections, with partial funding from the AAPG Foundation, offer elementary and middle school science teachers training in geology with applications to the petroleum industry. This is accomplished through the seminar, "Rocks In Your Head." The program is usually offered in conjunction with the Section conventions.

✓ The AAPG Foundation has a

See **President**, page 6

Candidates' Profiles Now Online

Biographies and individual information for the 2008-09 slate of AAPG officer candidates are available online at the AAPG Web site. The biographies and responses to the topic "Why I Chose to be a Candidate for AAPG Office" also will be inserted in an upcoming EXPLORER.

The president-elect winner will serve as AAPG president in 2009-10. The terms for both vice president-Sections and treasurer are two years.

Ballots will be available in spring 2008.

A complete list of AAPG rules and guidelines governing the campaign – for candidates and supporters – can be found online at <http://www.aapg.org/business/candidates/rules.cfm>.

The candidate slate is:

President-Elect

- John C. Lorenz, Geoflight LLC, Edgewood, N.M.
- Ronald A. Nelson, Broken N Consulting, Cat Spring, Texas.

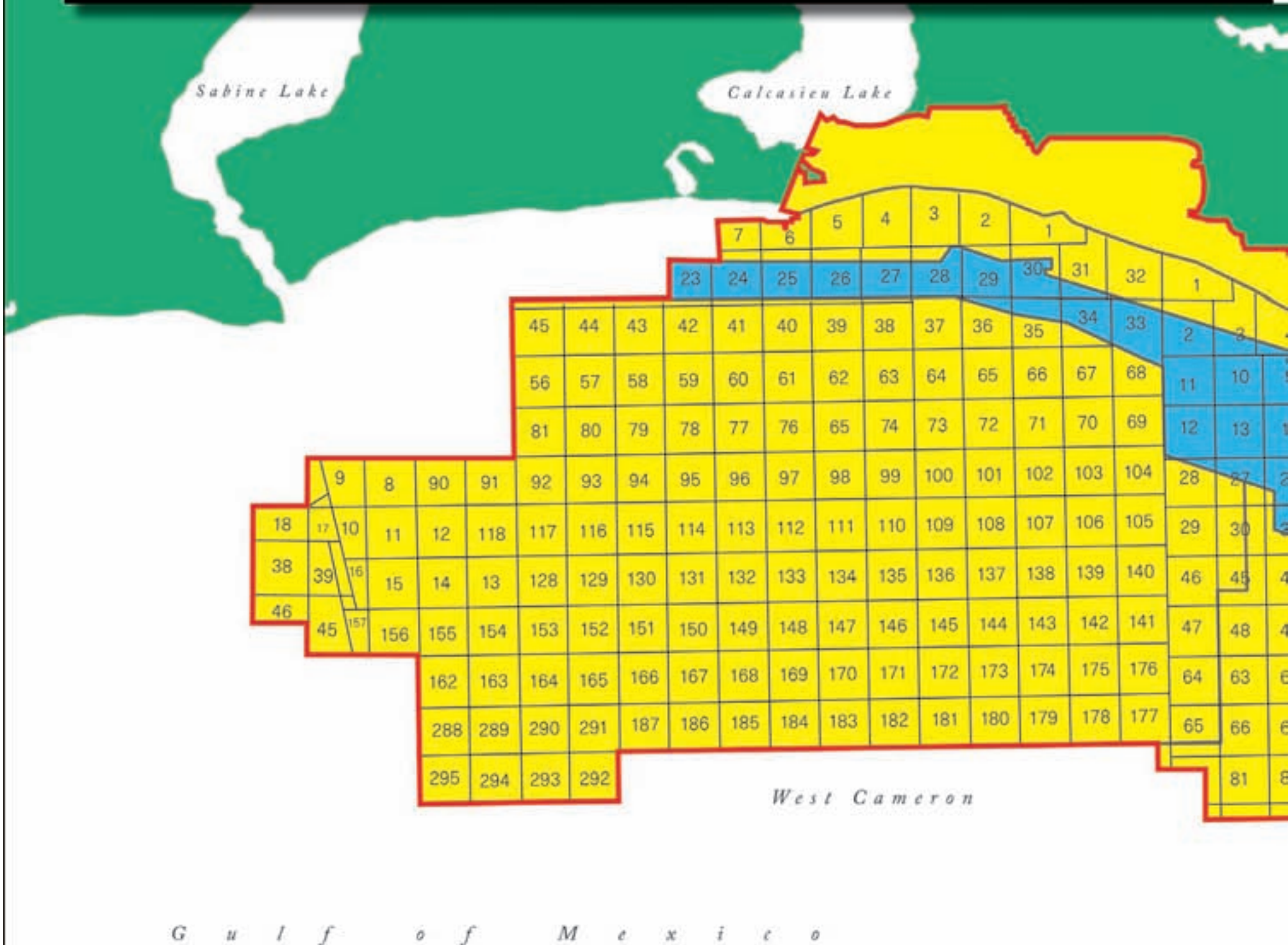
Vice President-Sections

- David H. Hawk, Energy Analysis and Answers/Consultant, Boise, Idaho.
- W.C. "Rusty" Riese, BP Americas, Katy, Texas.

Treasurer

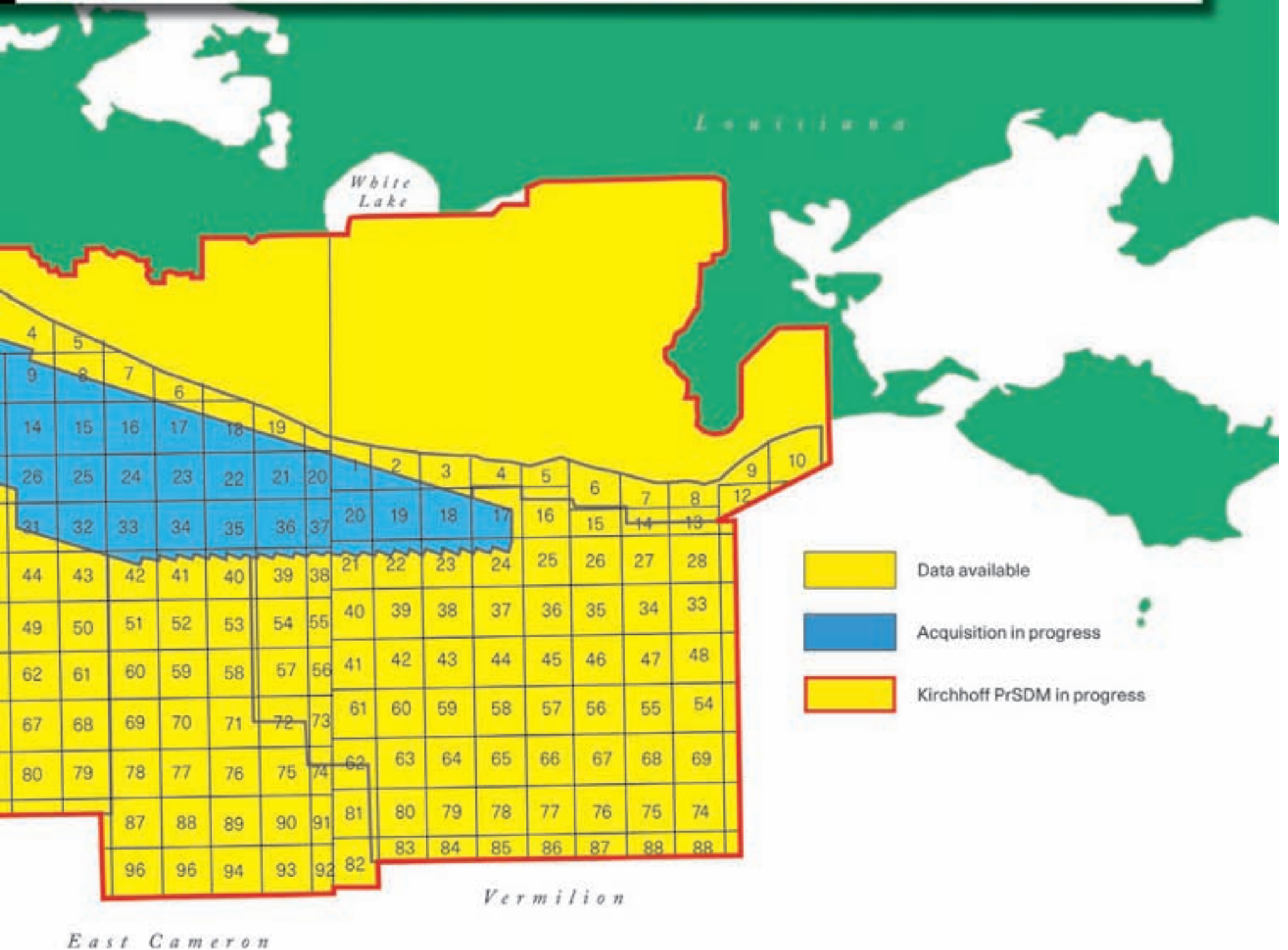
- Edith C. Allison, U.S. Department of Energy, Washington, D.C.
- Kay L. Pitts, Aera Energy LLC, Bakersfield, Calif.

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President

from page 3

Grants-in-Aid program, created to foster research in the geosciences by providing support to graduate students in the earth sciences whose research has application to the search for and development of petroleum and energy minerals resources and to related environmental geology issues. (See related story on page 49.)

A comprehensive and rigorous application and review process identifies the most deserving applicants, who are eligible for a maximum grant of \$2,000.

The 2006 application class completed the 50th year of the AAPG Grants-in-Aid program. In that time over \$2.5 million has been granted to 2,265 high quality master's and Ph.D. student research projects throughout the world.

✓ AAPG sponsors student chapters in

Earth Science Week, an annual event that focuses attention on the status of earth science in education and society – and which celebrates its 10th anniversary this year – will be held Oct. 14-20.

This year's theme is "The Pulse of the Earth," and various local activities will promote public and profession awareness of the earth sciences.

The theme also will focus attention on geosciences research, such as

160 universities throughout the world and endeavors to increase that number.

The newest chapter (as of this writing) is in Ecuador, and its addition to the group brings the total number to 80 international and 80 U.S.-based chapters. Student chapter membership totals over 5,000.

Student membership fees (\$10 per year) are generously sponsored by

that associated with the International Polar Year and the International Year of Planet Earth.

Through these major initiatives Earth Science Week will help spread understanding of the impact the earth sciences have on society.

A poster promoting Earth Science Week was inserted in North American issues of the August EXPLORER, courtesy of the AAPG Foundation.

Chevron.

The Student Chapter program was highlighted by several events at this year's AAPG annual convention in Long Beach, Calif., where students participated in oral presentation and poster competitions.

Thirty-five students also participated in a three-day post-convention field trip in southern California.

✓ This year AAPG began sponsorship of the Imperial Barrel Award (IBA) contest, a program originated at Imperial College (London).

The IBA program provides a real-world learning experience for college and graduate-level students that integrates their academic training with a team exploration project format. The students start with a seismic and well-data set to interpret and predict exploration potential in a designated basin.

Seven student teams presented their results and interpretations to a panel of judges at our annual meeting in Long Beach, Calif. Winner of the competition was the team from the University of Aberdeen (Scotland); the university received a gift of \$20,000 from AAPG.

Thanks to the huge success of the 2007 IBA, the program will be expanded to include worldwide Section and Region competitions with 12-14 school teams competing for the awards at next April's AAPG annual convention in San Antonio.

✓ The AAPG Visiting Geoscientist Program plays an important role in guiding students into earth science careers through direct student contact during college and university visits by active professional geoscientists (see August EXPLORER).

The volunteer AAPG members may provide a technical presentation on a variety of subjects or discuss career opportunities with the students, or may offer advice and counsel on career paths based on the presenter's own experiences.

Interaction with faculty and administrators also provides guidance regarding courses and field experience needed by students to become effective geoscientists.

✓ During the fall of 2006 and then again this past spring, AAPG and SEG sponsored four successful student-recruiting events across the United States: University of Wyoming in Laramie, Wyo.; University of Oklahoma in Norman, Okla.; the AAPG Eastern Section meeting in Buffalo, N.Y.; and Rice University in Houston.

Approximately 400 students participated in the four expos, designed to connect geoscience students with potential employers.

The students learned by presenting their work, networking and interviewing with multiple employers at a central location; companies benefited from cost-efficient recruiting from a large and diverse group of motivated students.

The 2007-08 expo schedule has been expanded to five and begins with a new event in Wichita, Kan., and continues with expos at the University of Wyoming; at Rice University; at the Eastern Section meeting in Lexington, Ky.; and at the University of Oklahoma.

What new programs are being planned by AAPG to help increase the energy work force?

AAPG, through its Corporate Advisory Board, has proposed a new program called the Petroleum Education and Research Consortium. The purpose of the program, currently in the planning stage, is to have long-lasting impact on petroleum-related teaching and research.

The consortium would help provide significant research grants to both graduate students and professors.

AAPG will do its best to make a difference in the supply of energy professionals for the future. □

Will Green



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*Lower Tertiary Prospects Emerge***GoM Now an International Target**

By DAVID BROWN
EXPLORER Correspondent

The Gulf of Mexico, a paradise for exploration.

Some paradise.

Maybe it's the subsalt plays that muddle seismic imaging and befuddle geophysicists.

Or the constant threat of hurricanes in the summer.

Or maybe it's the escalating production costs and brutal offshore environment.

Or the astronomical day rates for offshore drilling rigs – and sometimes no rigs available at all.

You just couldn't ask for better, and that's why the Gulf of Mexico has become one of the hottest deepwater play areas in the world.

Right now, a record 15 rigs are drilling in Gulf waters 5,000 feet or deeper, according to the U.S. Minerals Management Service (MMS). The agency calls water depths of 1,000-5,000 feet "deepwater" and over 5,000 feet "ultra-deepwater."

Those 15 ultra-deepwater attempts involve nine operators – ExxonMobil, Hydro Gulf of Mexico, Shell Offshore, Chevron USA, BP Exploration & Production, Devon Energy, BHP Billiton Petroleum, Woodside Energy and Anadarko/Kerr-McGee Oil & Gas.

Water depths range up to 8,694 feet, for a well drilling on ExxonMobil's Brontosaurus North prospect in Alaminos Canyon block 731.

Two favorable developments account for at least some of the Gulf's deepwater



Photo courtesy of Devon Energy Production Co.

The Nansen production platform operates in about 3,500 feet of water off the Texas coast. The facility was built with state-of-the-art hull technology designed to make oil and gas production more economical in the deepwater.

popularity, said David Cooke, an AAPG member and MMS deputy regional supervisor, Resource Evaluation Office.

"The infrastructure that has developed in the Gulf of Mexico has been pushed out into the deepwater, and now the ultra-deepwater," he noted.

Also, the potential that's indicated by recent exploration and development success also lures companies to the Gulf, Cooke said.

MMS staff finds that optimism in the presentations operators make before drilling in the Gulf deepwater and ultra-deepwater, according to Mike Prendergast, MMS section chief, Reserve Section.

"Oftentimes you see for the Miocene and Lower Tertiary a pre-drill estimate in the range of 200 million to 500 million (barrels of oil) equivalent" for an exploration structure, he said.

Promises, Promises

The Gulf's promise of attractive remaining reserves is definitely a major exploration factor, said Øivind Reinertsen, senior vice president of Statoil's Gulf of Mexico assets in Houston.

But just as important for a deepwater province, "it's one of the few places still available to oil companies around the world," he observed.

A government estimate puts undiscovered, U.S.-waters Gulf of Mexico resources at 50 billion recoverable barrels of oil equivalent.

Oil production from the Gulf is projected to exceed 1.7 million barrels of oil per day (bo/d) within the next 10 years. If currently announced discoveries and undiscovered resources reach their full potential, production could hit 2.1 million bo/d, the MMS has said.

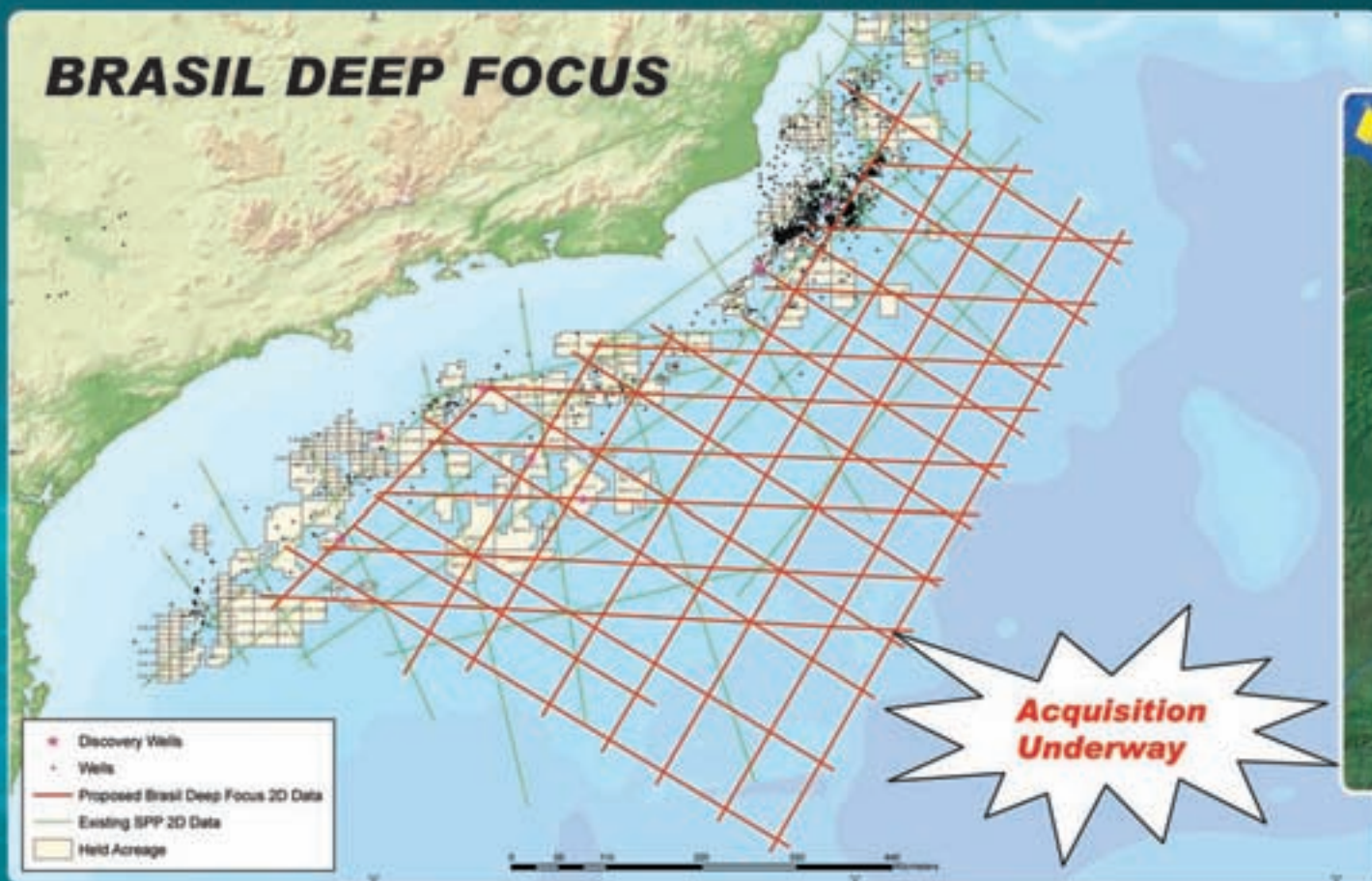
Already hot for deepwater players, the Gulf turned sizzling a year ago when Chevron announced production test results for its Jack #2 well in Walker Ridge block 758.

Tapping about 40 percent of the well's net pay in the Lower Tertiary trend, the test showed a sustained flow rate of more than 6,000 bo/d.

Not that many years ago, it was "a wild dream of a few explorationists that the Lower Tertiary even existed below the salt," Cooke observed.

"The first drilling that penetrated through the Tertiary suggested oil, and as

See **Deepwater**, page 10

When its a question of Brasil seismic...**BRASIL DEEP FOCUS**

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Deepwater

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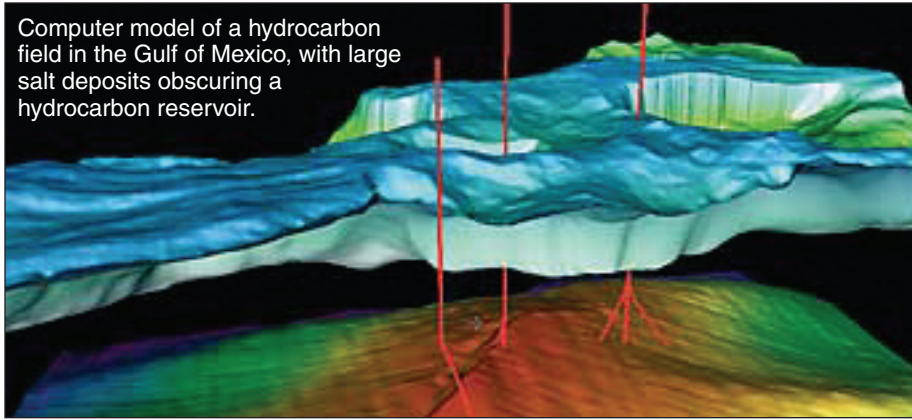
they've drilled and found where the sweet spots are, they're finding oil with very little associated gas," Prendergast said.

"The regional geologists have been able to go in and get an idea of the regional geology and what the depositional environments of the Lower Tertiary were," he added.

In fact, Upper Paleocene-Lower Eocene targets have attracted both attention and discovery success during the past five years.

The deepwater/ultra-deepwater Wilcox trend play could cover more than 30,000 square miles of the Gulf, with target well depths from 12,000 feet all the way to 35,000 feet, in water depths up to

Computer model of a hydrocarbon field in the Gulf of Mexico, with large salt deposits obscuring a hydrocarbon reservoir.



Graphic courtesy of BP

10,000 feet.

Salt canopies that can be an astonishing 10,000-20,000 feet thick cover about 90 percent of the play.

Advances in seismic acquisition and processing that improve imaging below

the salt, the success of the Jack test and the emergence of the Lower Tertiary prospects all have contributed to the current Gulf drilling boom.

New plays could develop in the Upper Cretaceous, Middle and Upper Eocene



Cooke



Prendergast

and Oligocene submarine fans and the Triassic-Middle Jurassic synrift section.

Meeting the Challenges

A few questions remain, however.

"One of the issues out there in the Lower Tertiary, according to some of the presentations, seems to be the rock quality," Prendergast said.

Another problem may be a fairly rapid decline in production, already reported in some other deepwater Gulf wells.

"If basically you produce faster than the ability to backfill into the space that's being voided," Prendergast said, "you get fall-off."

Compartmentalization may be a factor, but it will take another generation of seismic acquisition and processing before that can be reliably imaged, Cooke said.

"The bigger issue out here (in the ultra-deepwater) is the total depths of the wells and that you will see high pressure," he noted.

Day rates for rigs capable of drilling in the Gulf's ultra-deepwater soared during 2006, passing \$500,000 per day. There's no doubt drilling would be even more intense if rigs were readily available and more economic.

"More than half the rigs out there are doing evaluation or development work, but we expect that situation to improve over the next three years," Prendergast said.

MMS counts five new drillships, six new semi-submersibles and three upgraded semis coming into the Gulf of Mexico between 2008 and 2010.

The drill structures include a new cylinder-shaped floater from Sevan Marine that can be used as a floating production, storage and offloading (FPSO) vessel or as a drilling platform.

Petrobras awarded a six-year contract for the "Sevan Driller" FPSO for work in the Gulf, beginning in 2009. It will have a 40,000-foot drilling capacity in water depths up to 12,500 feet.

"Supposedly this new circular-type FPSO can be built in more shipyards around the world," Prendergast said. "We expect to see more FPSOs and new types of FPSOs (coming into the Gulf), but also some spars."

Current Events

The Gulf may see more phased-in production projects that can be adjusted to varying demands, and more types of production facilities.

For its Chinook Cascade field development, Petrobras has ordered an FPSO to be installed in 2,600 feet of water. The project will include a disconnectable Submerged Turret Production (STP) buoy from Norway's APL.

If disconnected from the FPSO in hurricane conditions, the STP buoy will float beneath the water surface and later can be re-locked to the vessel.

Heavy seas at the surface won't be the only problem to affect operators in the ultra-deepwater, according to Prendergast.

"They are looking at the bottom currents in the sea column – some come up from the Yucatan," he said. "That's an issue in both exploration and production drilling." □

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*GoM Figures Big in Statoil Strategy***Gulf of Mexico Bidders Focused**

By DAVID BROWN
EXPLORER Correspondent

You'd have to call leasing in the Gulf of Mexico more focused than frenetic.

In August, the U.S. Minerals Management Service (MMS) said its latest leasing round in the western Gulf attracted about \$290 million in high bids.

The lease sale offered 3,338 tracts offshore Texas and drew bids on 282 tracts, less than 10 percent of the total.

Geophysics apparently influenced the lease-bid decisions.

"Most of them are focusing in on plays in the Keithley Canyon and Alaminos Canyon that can be imaged fairly easily with depth-migrated data," said David Cooke, an AAPG member who is MMS deputy regional supervisor, Resource Evaluation Office in New Orleans.

Other areas that drew bids included the expanse from Alaminos Canyon to north and west of the Perdido hub and the south part of Garden Banks.

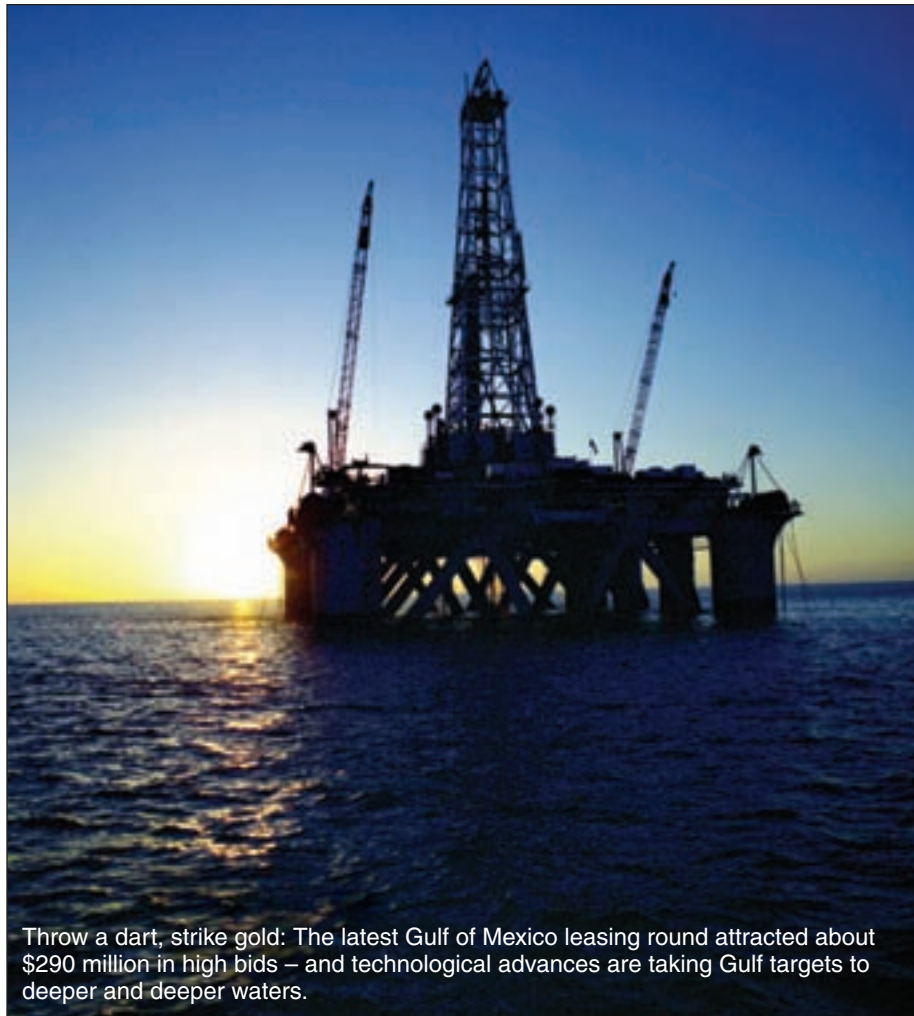
"Data quality there will improve during the next 10 years under the lease cycle, so they can discover the new Jacks and the new Tahitis," said Mike Prendergast, MMS section chief, Reserve Section.

Statoil Gulf of Mexico LLC far outdistanced all other bidders with 36 high bids totaling almost \$138.9 million.

BP Exploration & Production Inc. followed with about \$31 million in high bids.

First Steps

Statoil assessed prospects worldwide several years ago and decided to re-enter



Throw a dart, strike gold: The latest Gulf of Mexico leasing round attracted about \$290 million in high bids – and technological advances are taking Gulf targets to deeper and deeper waters.

Photo courtesy of Woodside Energy (USA)



the Gulf of Mexico with a strong presence, according to Øivind Reinertsen, Statoil senior vice president for Gulf of Mexico operations.

The company's aggressive bidding in the recent lease sale tracked part of a four-part plan, he said.

"The first step was, we decided we should farm-in to some major operators, mainly to get access to data and to learn from them," Reinertsen explained.

"Secondly, we said that we should try to make some bigger acquisition to get a flying start with respect to the deepwater and get access to a number of leases. We did that in 2005 and 2006," he said.

In 2005, Statoil paid \$2 billion for the deepwater Gulf portfolio of EnCana Corp. It got an average 40 percent working interest in 239 gross blocks, spread over 1.4 million acres.

Key assets in that acquisition included interests in the Tahiti development and the Jack, Tonga, Fox, St. Malo and Sturgis

See **Gulf Leases**, page 14

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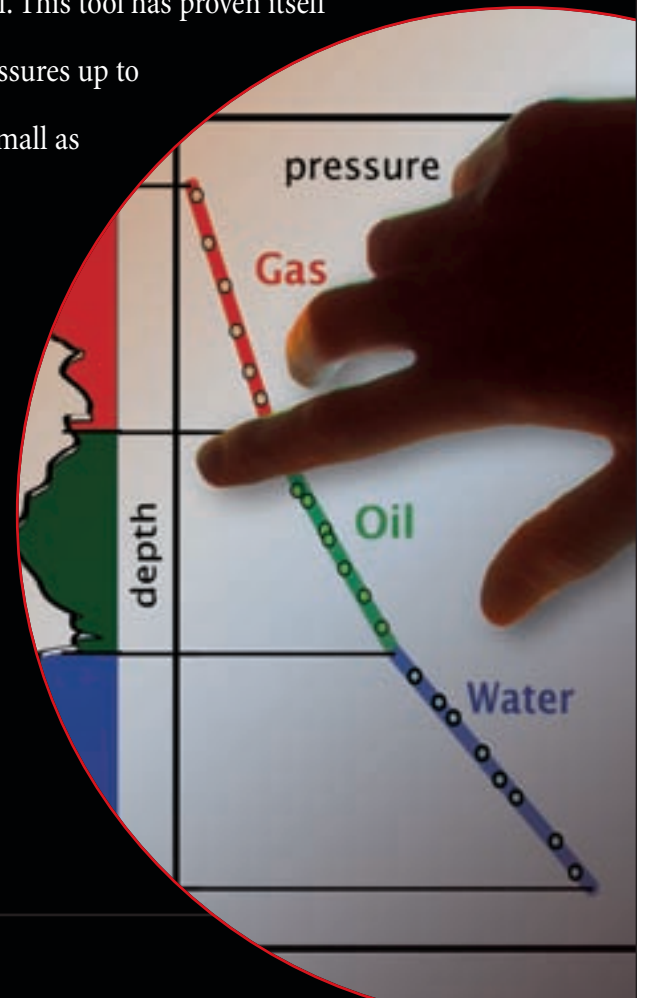
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Gulf Leases

from page 12

discoveries. Statoil now holds a 25 percent interest in Tahiti, as well as in the Jack discovery.

Last year, Statoil paid \$700 million to Plains Exploration & Production Co. for additional interests in the Greater Tahiti area. It acquired a 17.5 percent interest in the Shell-operated Caesar discovery and 12.5 percent in Chevron's Big Foot discovery and Big Foot North prospect.

The company then paid \$901 million to Anadarko Petroleum Corp. to acquire a 25 percent working interest in the deepwater Knotty Head oil discovery and an additional 15 percent working interest in both Big Foot and Big Foot North.



Reinertsen

Keeping Focused

Reinertsen said that the company's third step "was to be very active in the lease sales coming up in 2007-08, because we knew there would be a turnover of leases in deepwater based on the lease grab back in 1997-98," Reinertsen said.

Successful bidders had 10 years to begin drilling on their deepwater Gulf of Mexico blocks "and not much has been done to those leases," he noted.

In planning its acquisitions and lease bids, Statoil decided to target a few promising, key areas.

"One of the main things in our strategy when we re-entered the Gulf of Mexico was to be very focused. If you look at our portfolio, we are strong in the Tahiti area, we are strong in the Walker Ridge area

The top five companies submitting the highest dollar amount of high bids for Sale 204:

Company	Number of High Bids Submitted	Sum of High Bids Submitted
Statoil Gulf of Mexico LLC	36	\$ 138,889,688
BP Exploration & Production Inc.	91	31,015,727
Petrobras America Inc.	34	29,268,100
Devon Energy Production Company, L.P.	26	20,035,500
ConocoPhillips Company	24	12,341,000

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ConocoPhillips Company	24	12,341,000

The top five companies submitting the highest dollar amount of total bids for Sale 204:

Company	Number of Total Bids Submitted	Sum of Total Bids Submitted
Statoil Gulf of Mexico LLC	40	\$ 143,145,888
BP Exploration & Production Inc.	108	55,141,176
Petrobras America Inc.	40	30,082,600
Shell Offshore Inc.	11	23,319,996
Devon Energy Production Company, L.P.	34	21,887,000

Source: U.S. Minerals Management Service

and we also are strong in the Great White area from the last lease round," Reinertsen said.

So far, Statoil has partnered with other operators in the Gulf but expects to begin drilling prospects on its own within a year, explained Reinertsen.

"The fourth step is to operate on our own leases and that will happen next year," he said. "We have contracted a new rig from Maersk presently being built in Singapore – that will come into the Gulf of Mexico by the summer of 2008."

Reinertsen said Statoil was drawn back to the Gulf by the possibility of promising reserves and the political stability and open availability of the area.

As a third reason, he cited Statoil's experience in offshore operations.

"Based on our experience from the harsh-environment, deepwater Norwegian continental shelf, we believe we have something to add to the deepwater Gulf of Mexico," he said.

"We are one of the biggest operators of subsea production wells in the world, second to Petrobras," he added. "We have developed a lot of new technology, like subsea processing. We have flow assurance. We have a pressure protection system that could be requalified from 500 meters to 1,500 meters."

Houston Partnerships

Statoil is in the process of finalizing its merger with the oil and gas arm of Norsk Hydro.

Both companies have extensive offshore experience and hold interests in the Gulf of Mexico. The companies have invested a combined total of about \$6 billion recently in Gulf properties.

"Based on the successful project experience we have both from Statoil and

See **Exploration**, page 16

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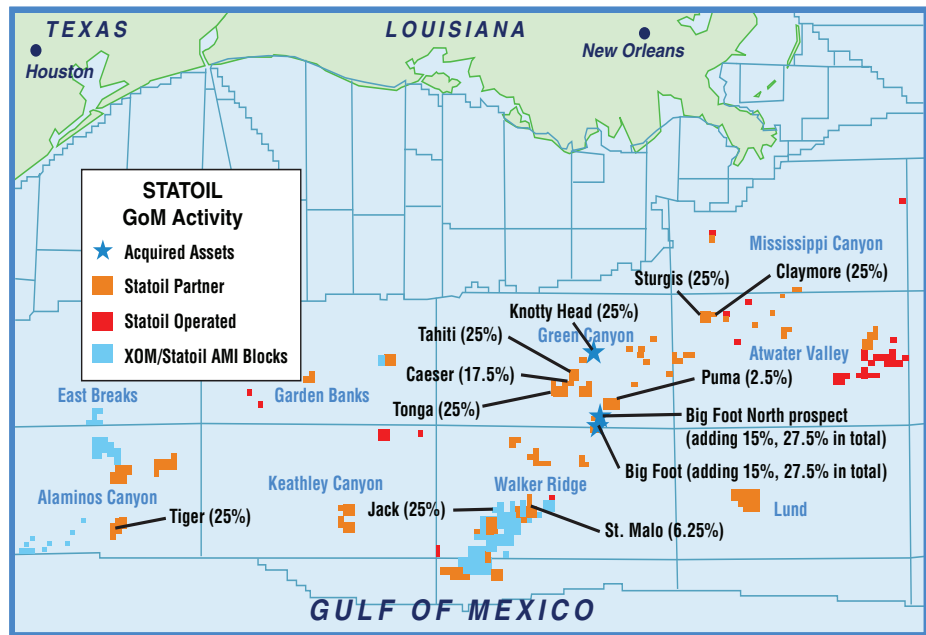


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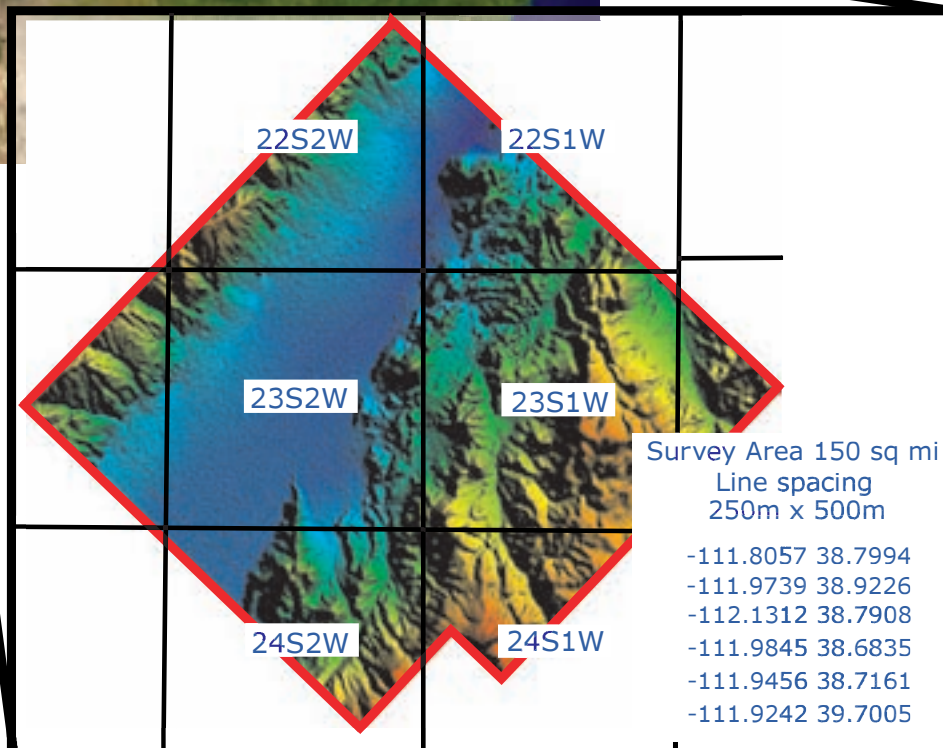
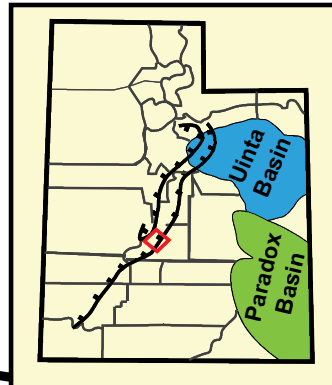
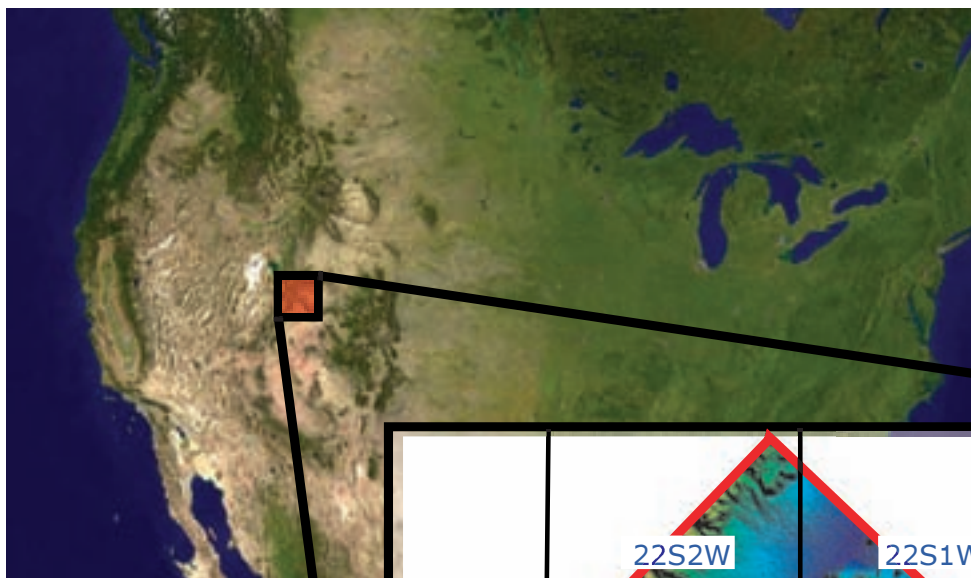


Deep Drilling in the Gulf			
Operator/Drilling Company	Area/Block	Drilling Rig	Water Depth (ft)
Exxon Mobil Corporation	AC 731	Ocean Eirik Raude	8,694
Hydro Gulf of Mexico, L.L.C.	MC 961	Noble Amos Runner	7,925
Shell Offshore Inc.	AC 857	Noble Clyde Boudreaux	7,819
Shell Offshore Inc.	DC 353	T.O. Deepwater Nautilus	7,457
Chevron U.S.A. Inc.	WR 758	T.O. Cajun Express	6,959
BP Exploration & Production Inc.	GC 743	GSF Development Driller II	6,822
Devon Energy Production Company	WR 278	Diamond Ocean Endeavor	6,475
BHP Billiton Petroleum (GOM) Inc.	AT 574	GSF Development Driller I	6,211
BP Exploration & Production Inc.	MC 778	Thunder Horse PDQ	6,033
BP Exploration & Production Inc.	MC 775	T.O. Discoverer Enterprise	5,673
Chevron U.S.A. Inc.	MC 860	T.O. Discoverer Deep Seas	5,667
BP Exploration & Production Inc.	KC 244	T.O. Deepwater Horizon	5,431
Woodside Energy (USA) Inc.	GC 949	Noble Max Smith	5,368
Anadarko	GC 768	Diamond Ocean Star	5,255
Chevron U.S.A. Inc.	WR 29	Ensco 7500	5,232

Source: U.S. Minerals Management Service



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Exploration

from page 14

from Hydro, I'm sure we can take on deepwater development here," Reinertsen said.

To oversee Gulf operations, the company opened its Houston office in the summer of 2005 with three people. By October, the office will have 250 people after the merger of Statoil and Hydro closes.

"If you look at us after October, we will probably be second in the deepwater Gulf of Mexico after Anadarko in water depth more than 4,000 feet. Overall, we will be number four," Reinertsen said.

Remarkably, Statoil has invested billions of dollars in 200 Gulf properties plus another 36 leases in the latest MMS sale, but will wait at least five years for any significant payday. Even the initial start-up production from Tahiti has been pushed back from its projected start month in 2008.

"We have a lot of discoveries that are going through the different decision gates," Reinertsen said, "so I don't think we will see a major build-up of production before 2012, in that range."

Next Challenges

Looking forward, he sees two major challenges to operating in the Gulf.

"First of all, it's the subsalt," he noted. "Everything is below the salt and to see seismic below the salt is a challenge, so you can be more precise in selecting drilling locations, etc."

"The second thing is the cost of the wells. A well in deepwater in the Gulf of Mexico today in this area costs more than 100 million (U.S.) dollars. And that is a challenge," he said.

One answer to the cost challenge, according to Reinertsen, is developing and using new technology to make development more efficient, by having less expensive wells or fewer wells.

A joint Chevron-Statoil technology team was established in 2006 to explore technology options for development in the Gulf.

Reinertsen described it as "a group of people sitting together identifying what sort of new technologies we have in both companies, and how we can qualify this for the water depths we have here in the Gulf of Mexico. And also, what sort of new technology will be required."

"I think we have to look at new ways of developing fields," Reinertsen observed.

"We are looking at hub solutions instead of only pursuing independent development," he said, "as has been the case on the shelf and also the first part of the deepwater." □

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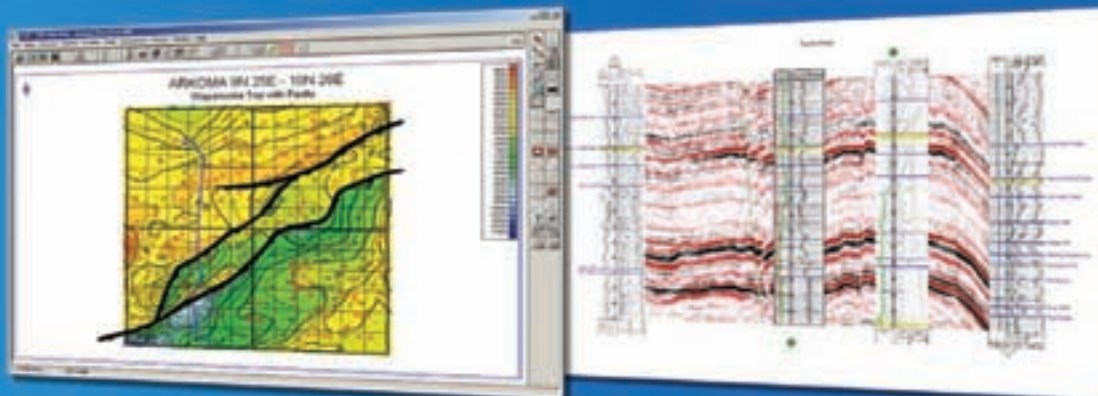
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*Sligo Revamp Gives Boffo Returns***New Insights Into Old Field Rewarded**

By LOUISE S. DURHAM
EXPLORER Correspondent

Oil and gas activity in South Louisiana ordinarily tends to garner way more attention than the action in the northern part of the Bayou State.

But even though it may occupy a lower position on the buzz-scale, North Louisiana has a long history of drilling and production that continues today – and some of its very old fields are being revitalized big-time.

Sligo Field – which was discovered in the late 1930s – is one example that should serve to inspire the prospectors out there who are picking over the remains of mature properties in hopes of finding untapped reserves.

When AAPG member Michael Geffert and Joe Bridges, managing partners at Greystone Oil & Gas LLP, first took a serious look at Sligo Field in Bossier Parish in 1995, it already had produced more than 500 BCFG from the Hosston formation – yet they suspected there was plenty more gas left in the ground.

The two oil finders had extensive experience in the Upper Jurassic and Lower Cretaceous reservoirs in the Ark-La-Tex area, where they had completed hundreds of wells.

"We were especially familiar with the fields and structures immediately east of Sligo Field where the structure, dip, traps and reservoirs were almost identical to Sligo," Geffert said.

"We understood the reservoirs," he added, "and after taking one look at the field, we realized there was a good chance the operator at the time (Pennzoil) had left a lot of gas behind."

"We realized there was a good chance the operator at the time had left a lot of gas behind."

Something More

Working together under the banner of Greystone Petroleum LLP, the duo began what would become a year-long evaluation effort to verify their opinions. Because of the age of the field, the evaluation required considerable manual data gathering in addition to acquiring readily available information from public sources.

The project became more than just a field study.

In fact, the partners concluded an adequate evaluation would entail correlating all of the logs in this series of sands from the Texas-Louisiana state line and east to Monroe in order to acquire a correlation with sturdy enough legs to stand up over time.

Geffert also did a turnaround and correlated back to the state line to ensure there would be no drift in their correlations and evaluation.

To put this into better perspective, about 2,000 logs were utilized.

The study included identification of the perforated interval history for the entire life of each well to determine the exact source of the production. Bridges said they correlated about 70 reservoirs and determined thicknesses in order to

isopach the sands.

Incorporating all of the essential data, a material balance analysis indicated that more than half of a Tcf remained in the Hosston formation alone. A number of other reservoirs were identified as potential contributors – including Upper Jurassic Cotton Valley, which Bridges said is the second most important source of remaining reserves.

He emphasized that the total reserves estimate applied to the entire field and not just the two-thirds owned by Pennzoil.

Purchasing the field became an effort that kind of took on a life of its own.

"We made our first offer to buy (the Pennzoil portion) in 1996," Bridges said, "and for six years we kept making offers to Pennz, UPR (which almost purchased Pennz) and, finally Devon."

The deal ultimately was cut with Devon Energy in March 2002 and carried a price tag of \$131 million.

It was a giant step, requiring a heap of confidence.

"One of metrics of a purchase that many people notice is dollars of purchase price per Mcf," Bridges said. "We set a record for the most dollars paid per Mcf of daily production with that purchase – it was a handsome price."



"Likely, the general consensus was we paid way too much," Bridges noted. "But we had done a lot of work and felt like things we saw, evaluated and could make happen – that made the price worthwhile to us."

Believe It

They were right, but making it all work was a challenge.

"Our initial business plan when we purchased it was to recomplete wells," Geffert noted. "This was not a failure, but we weren't coming up with the flow rates we needed."

"We found too many bridge plugs to drill through, bad cement behind pipe, poor pipe integrity and other things," he said. "So we re-grouped and re-ran our reserves projections and came up with the same number as before and decided to re-drill wells."

"When we re-drilled, we took a formation pressure test in every gas

See **Sligo**, page 20

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'Oyster Leases' Just a Shell Game?

By LOUISE S. DURHAM
EXPLORER Correspondent

Q: When is an oyster lease not an oyster lease?

A: When the oyster lease is taken with no intent to harvest oysters.

In other words, it's a speculative lease acquired to generate income from another source: oil and gas companies.

It's a practice that has become relatively common in coastal Louisiana, which harbors some of the most productive oyster grounds in the United States.

Oyster leasing in the Bayou State is a revered, near-sacred institution that dates back to the late 1800s. The leases are both heritable and transferable and often are passed from one generation to the next.

The lessee has exclusive use of the

water bottoms for oyster cultivation.

The leases have long co-existed with the region's prolific oil and gas activity, which has the potential to inflict damage to these bottomlands. As a result, compensation for actual – or fabricated – damage is a routine practice for the oil industry.

Some oystermen reportedly claim damage even if a company merely lays out plans to lay pipe or move a rig onto the lease area.

There's major money involved.

In fact, the oil companies have shelled out millions of dollars to oyster lease holders for passage over leases where there has never been – and never will be – an oyster harvested, according to Don Briggs, president of the Louisiana Oil and

Gas Association.

But time is money, and the companies opt to write a check rather than litigate, Briggs noted, while emphasizing that the rogue speculators do not represent the majority of the oyster industry participants.

Given the situation, the Louisiana Department of Natural Resources (DNR) commissioned LSU natural resource economists Walter Keithly and Richard F. Kazmierczak to conduct a study of speculative oyster leasing.

The DNR recently released the effort's final report: "Economic Analysis of Oyster Lease Dynamics in Louisiana."

The report noted that the renting of oyster leases for speculative purposes is legal, but the thinking is that levels of leased acreage would be lower without the

juxtaposition of oyster leasing and oil and gas activity. Oyster lease acreage totaled 400,000 acres in 2004.

"The amount of acreage has increased significantly since the 1960s with no increase in oyster production off the leases," Keithly said. "This leads one to surmise a certain amount of that lease activity is a result of speculation."

"In the oyster industry's defense, we did note they have had to lease increased acreage to protect themselves to some extent from things like increased salinity and so forth," Keithly added. "Still, one can draw the conclusion that at least some of that acreage was leased for speculative purposes."

It's unlikely that newcomers will get in on the game of reaping rewards for doing nothing – at least not any time soon – as Louisiana reportedly has a current moratorium on the issuance of oyster leases on water bottoms not presently under lease.

In recent years the income derived from payments associated with oil and gas activity is estimated to equal or exceed the net income derived from actual oyster harvesting activities, according to Keithly.

"The total annual value of the state's oyster production is about \$12 million," he said. "But the oystermen gross \$10.1 million to \$14.79 million from oil and gas activity (so-called)."

The income available to oyster leaseholders is derived from two major oil and gas industry sources:

- ✓ Non-seismic, which includes production-related activity, such as pipelines, rigs and equipment maintenance.

- ✓ Seismic activity, which includes program surveys and equipment deployment for the actual data acquisition.

Keithly noted the calculated lower-bound estimate of annual compensation received by leaseholders for seismic activities for the 2002-05 time period was \$2.04 million, with a corresponding upper-bound estimate of \$2.73 million. □



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Sligo

from page 18

producing reservoir in the wellbore," Geffert added. "We found that depending on where we were that 50 to 60 percent of the reservoirs were virgin pressure, and when we began completing and commingling all the producing reservoirs, we started flowing a lot of gas."

The flow was sufficient to grab the attention of Chesapeake Energy, which bought the field in May 2004 for a hefty \$425 million.

"When we purchased the field, the Pennzoil net interest was making about 9.5 million cubic feet a day," Geffert said. "When we sold to Chesapeake, we were making more than 61 million cubic feet a day with three wells being completed, three wells drilling."

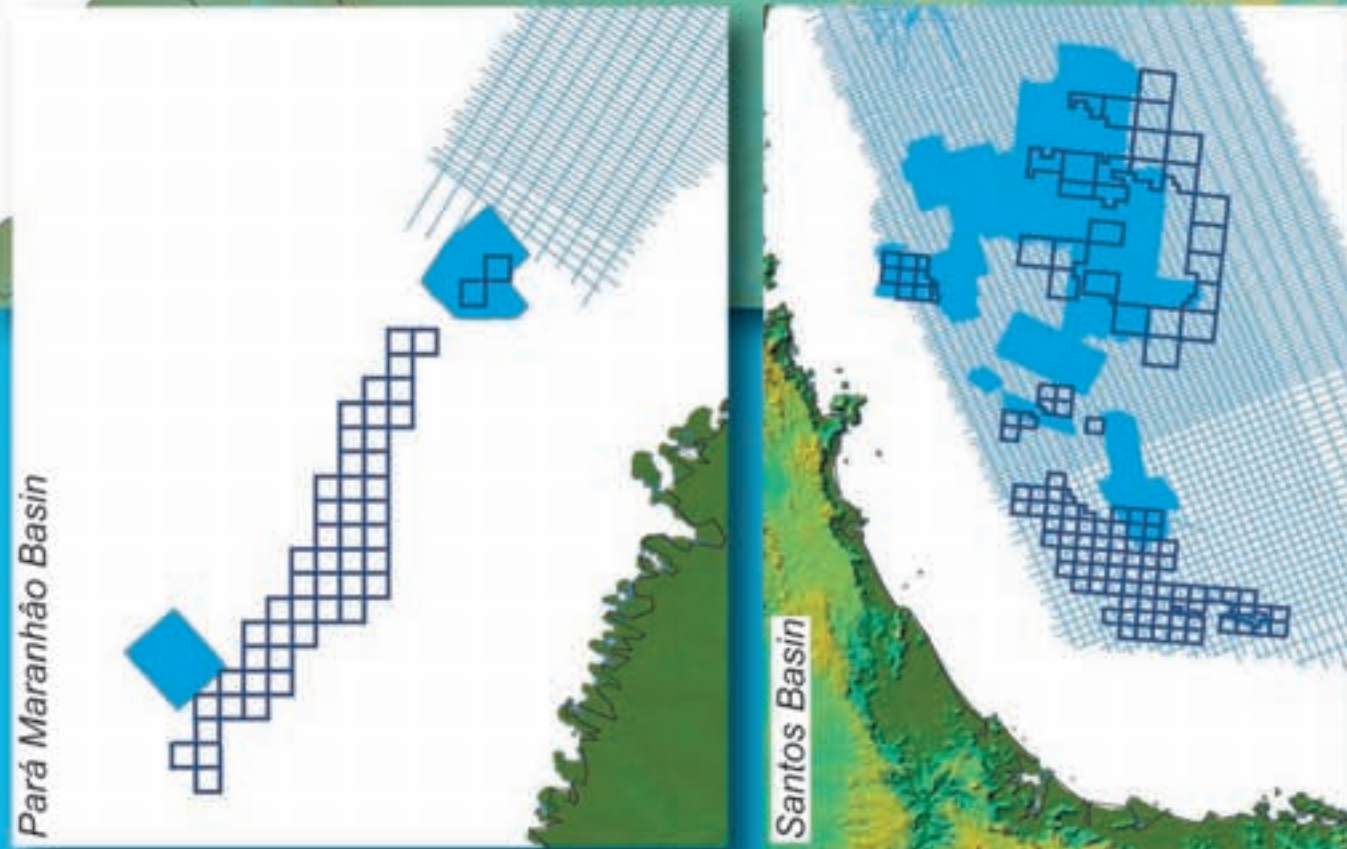
"Additionally, there was going to be a fourth rig, so we could easily have jumped over 65 to 70 million cubic feet a day."

While the ultimate reward was sizeable, the yearlong evaluation and the ensuing six years spent trying to make the initial purchase would challenge most anyone's determination.

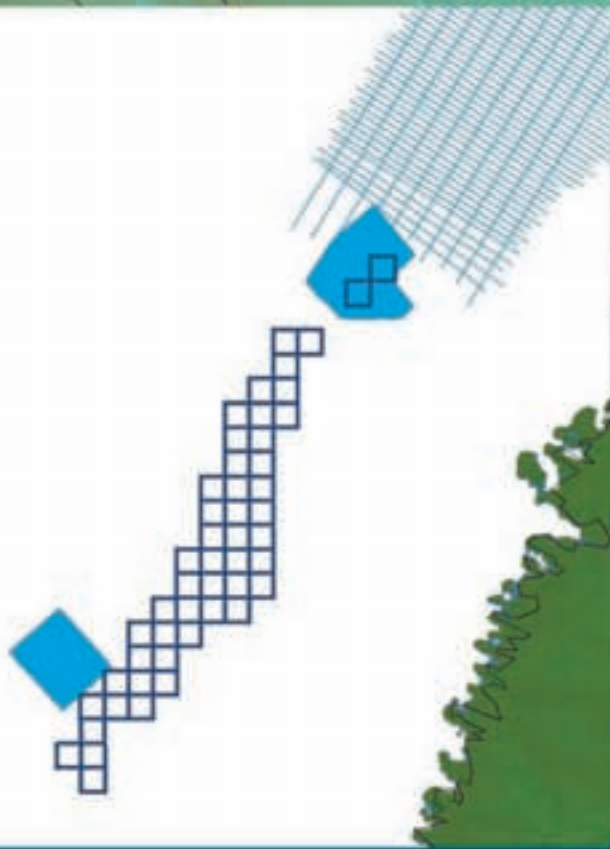
"There were times when we had our doubts, because six years is a long time," Bridges said. "We had other projects going on, but that was the project that captured our interest in which we had put a great deal of effort and which we thought had a great deal of opportunity."

"That notion was not widely held," Bridges noted, "but we believed it and stayed after it." □

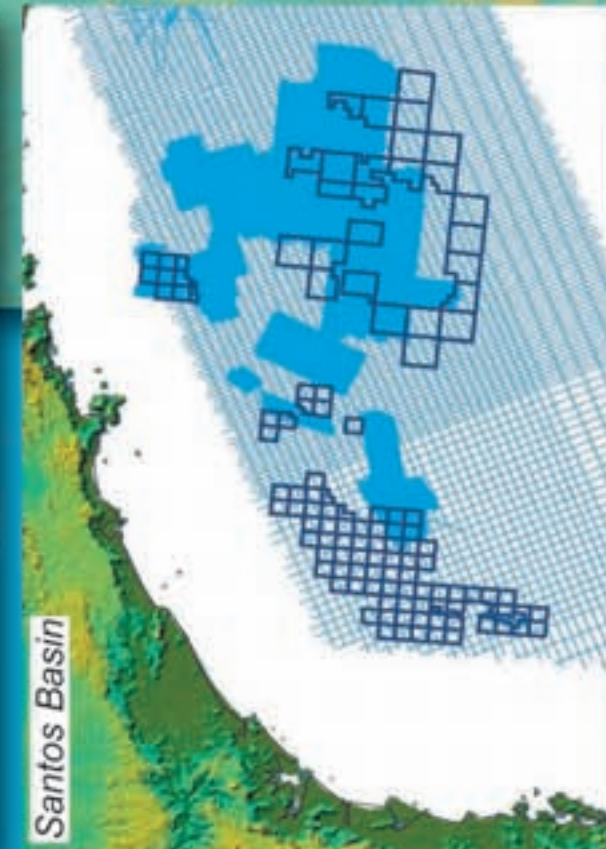
Brazil 9th Round Data



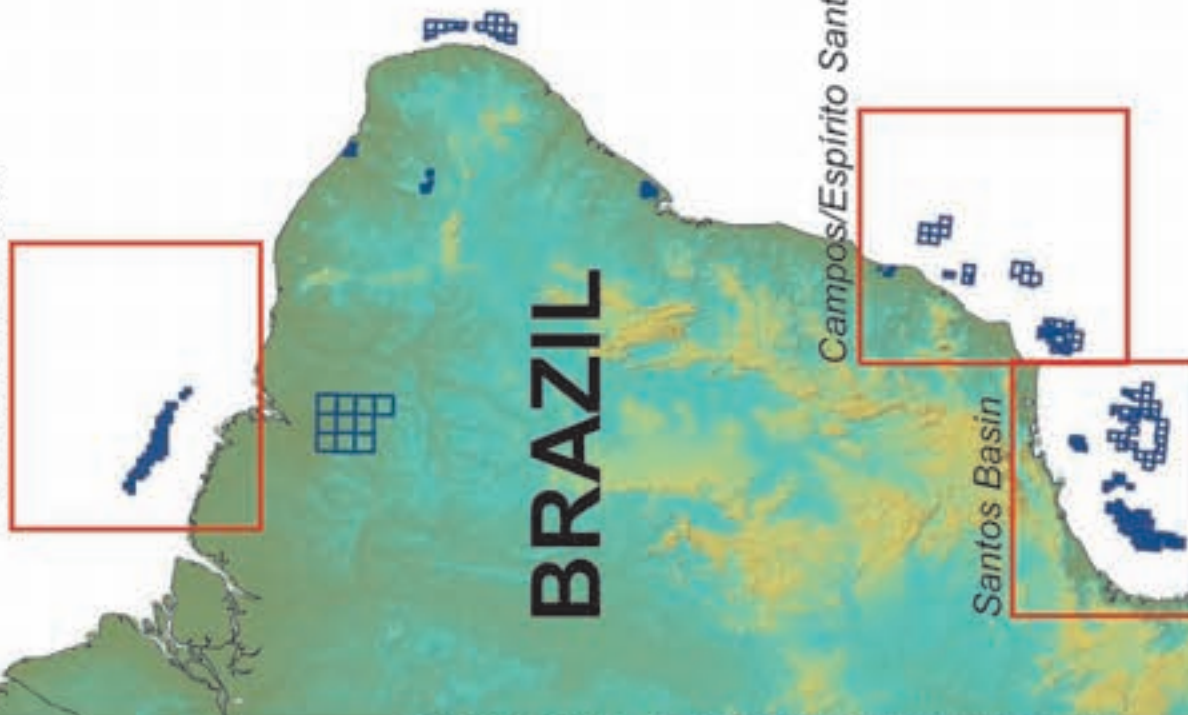
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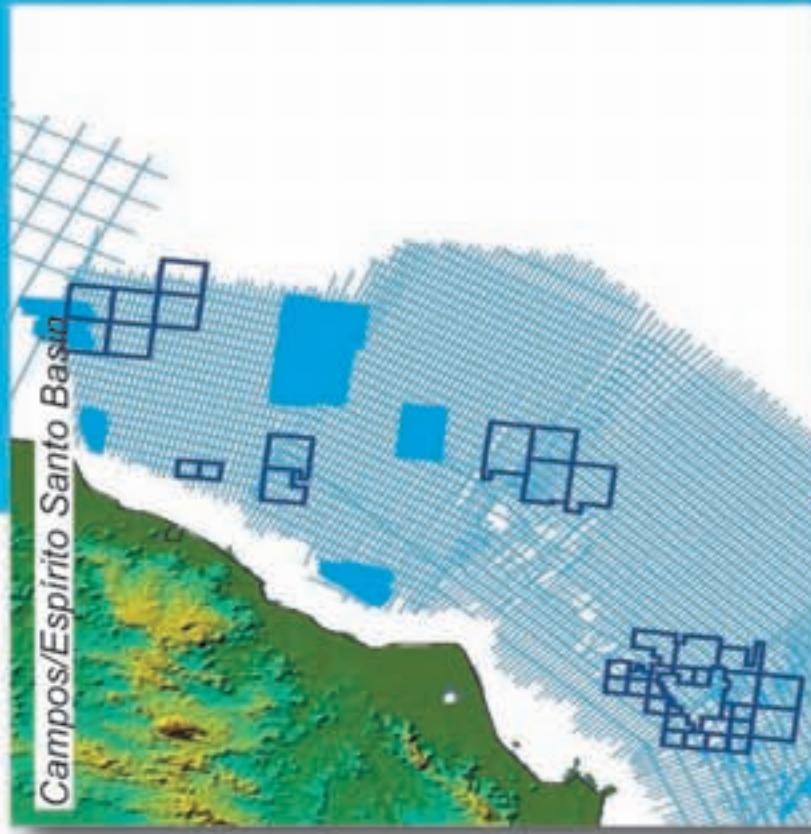
Santos Basin



Pará Maranhão Basin



Campos/Espírito Santo Basin



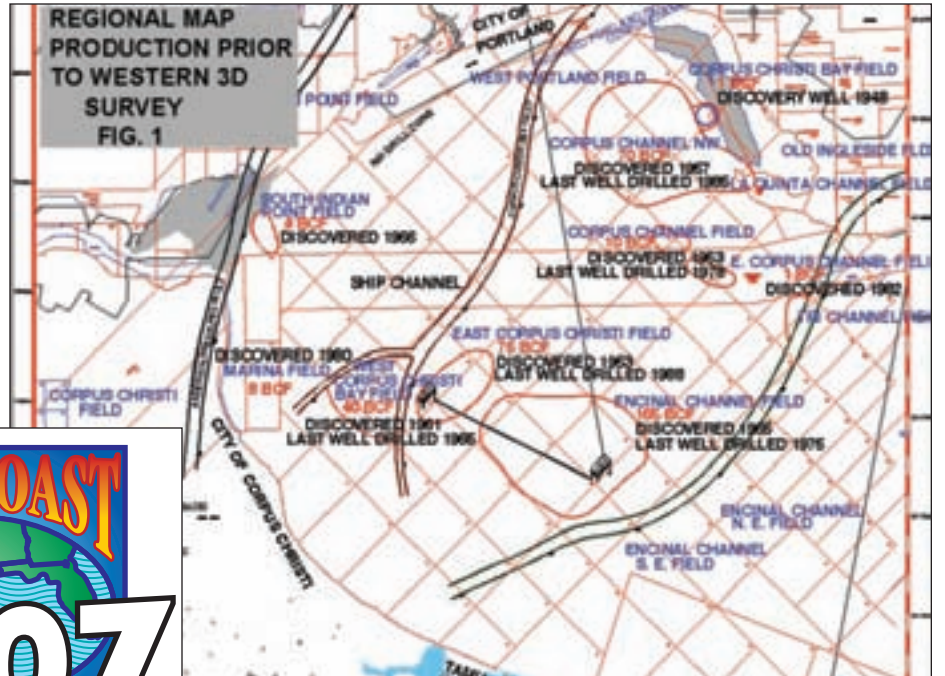
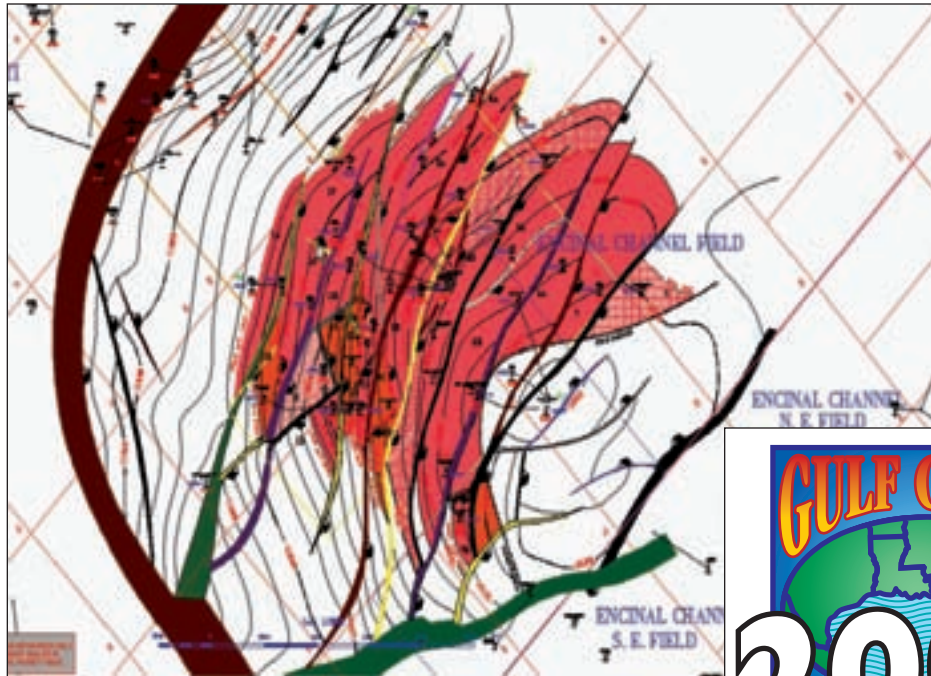
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And the Faults Hid Their Charms

Corpus Bay Fields Hid Their Faults

By LOUISE S. DURHAM
EXPLORER Correspondent

The use of 3-D seismic data has become so commonplace in the E&P world that for the most part it's now considered just part of the everyday routine.

Yet 3-D applications continue to generate results akin to near-miracles in certain situations.

A notable example can be found in

Corpus Christi Bay off the lower Texas coast, where Royal Exploration Company partnered with Sabco Oil & Gas Corp. in 1997 to exploit state leases in the bay.

The leases were held by production by Sabco via remnants of Frio production discovered years earlier.

"The partnership concentrated on two fields – East Corpus Christi and Encinal Channel – which are downthrown to a

Robert M. Rice will present the paper "Corpus Christi Bay – Another 3-D Success" at 9:45 a.m. Monday, Oct. 22, at the GCAGS annual convention in Corpus Christi, Texas.
Rice also will present a poster on the same subject on Tuesday morning, Oct. 23.

large growth fault, which extends across the mid-section of the bay," said Robert Rice, geologist at Royal. "The two fields are located on a shale cored ridge, which is perpendicular to the growth fault."

At the time, the structurally simple, non-geopressedured East Corpus Christi field had produced 90 BCF from Upper

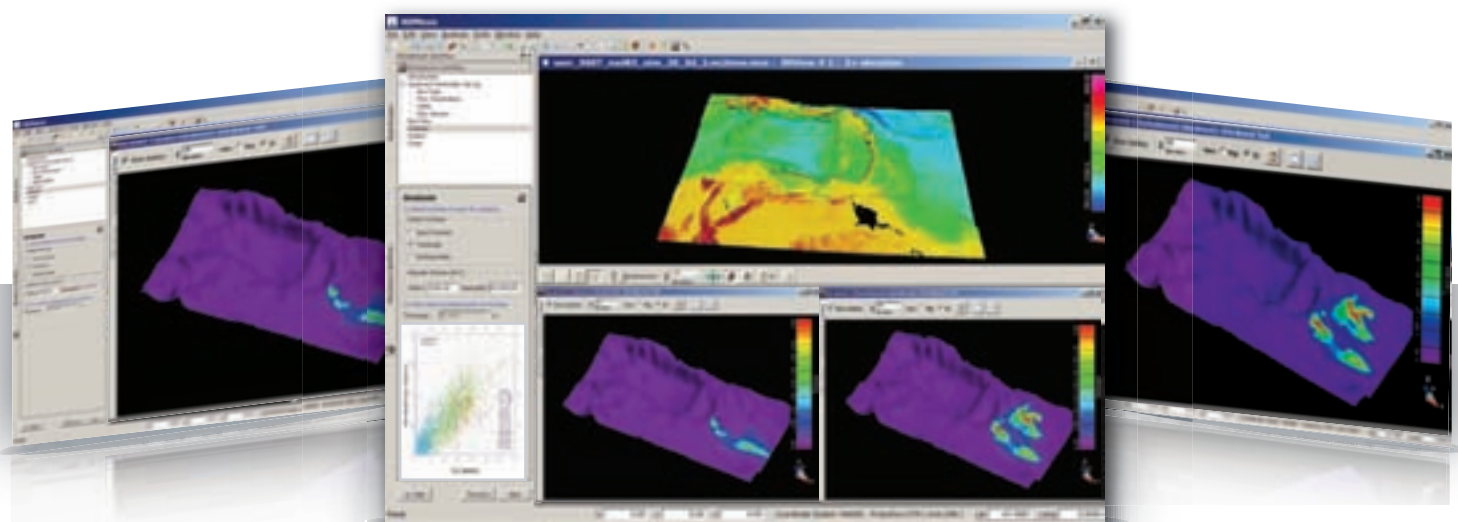
See **3-D Success**, page 24



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Climate Change Forum Set for GCAGS Meeting

A technical program touting the best of Gulf Coast geology, science, technology and exploration plus a global climate change forum are all part of this year's annual convention of the Gulf Coast Association of Geological Societies, which will be held Oct. 21-23 in Corpus Christi, Texas.

The convention also will offer a prospect deal-making area within the exhibits hall.

"Exploring the Third Coast" is the theme for the meeting, whose technical program is built on short courses, field trips, nine oral sessions, four poster sessions and the climate change forum.

The forum, to be held from 1:30-4 p.m. on Monday, Oct. 22, is titled

"Estimating Natural Versus Human Impacts on Global Climate Change."

It was designed to provide "an overview of the current understanding of the natural and human factors forcing global climate change based on the latest scientific observations and research," according to Bill Maxwell, who with Gloria Sprague are the forum's co-chairs.

Each panelist will present his/her view of the causes and consequences of global climate change based on their own research and study, Maxwell said, and not on "politics or opinion."

The forum will be moderated by Sylvia Earle, program director of the Harte Research Institute at Texas A&M

University, and the All-Convention Luncheon speaker at the 2003 AAPG Annual Meeting in Calgary, Canada.

The forum includes four distinguished scientists who have spent much of their professional careers conducting original research on the subject of global climate change.

Forum panelists are:

✓ John Anderson, Maurice Ewing Professor of Oceanography, Rice University, Houston.

✓ Eric J. Barron, dean of the Jackson School of Geosciences,

University of Texas, Austin. Barron also was a member of the committee responsible for AAPG's recently updated statement on global climate change.

✓ Michael MacCracken, chief scientist for climate change programs, Climate Institute, Washington, D.C.

✓ Philip Nissen Froelich, Francis Eppes Professor of Oceanography, Florida State University, Tallahassee.

To register, or for more meeting information, go online to <http://www.gcags2007.com/>. □

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3-D Success

from page 22

Frio sands at maximum depths of 9,000 feet subsea.

In contrast, Encinal Channel, which becomes the dominant structural feature below this depth, produced more than 150 BCF from mostly geopressed Frio sands, where the faulting becomes increasingly complex with depth.

"Encinal Channel is largely unfaulted above the geopressed interval and was adequately exploited by 1960-era technology," Rice said. "The key to additional reserves was the advent of complex faulting below the pressure point – about 9,500 feet subsea – combined with a stratigraphic section with thicker shale sections between the sands.

"This combination led to multiple high-side fault traps on the overall large Encinal Channel anticline."

Get a Clue

The entire two-field complex had been discovered and exploited beginning in 1952, before high quality 2-D data were available.

It is noteworthy that Royal and Sabco struck their partnership deal the same day that Western Geco released 80 square miles of speculative 3-D data in western Corpus Christi Bay.

"When Western came in, the bay had produced 375 BCF – before 2-D was any good – from fields under the first 80 squares they shot," Rice said. "It was just the perfect place for 3-D."

A "clue well," the Gulf Oil ST 48 #2, provided Royal and Sabco with the confidence to license the new data.

The 48 #2 well had encountered the geopressed Middle Frio *Nodosaria blarpedi* M-4 sand at 10,588 feet subsea. The M-4 was perforated within 10 feet of the gas-water contact and went to water after producing 2.6 BCF.

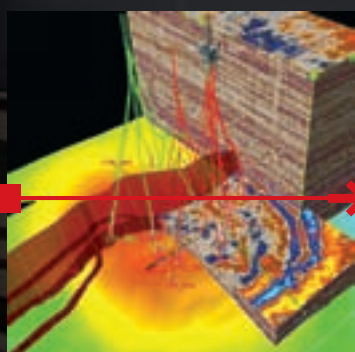
Subsurface control showed the 48 #2 well to be 335 feet low to the Cities Service ST 49 #1 discovery well for the field.

There appeared to be 700 acres of un-produced prospective territory between the two wells, where a third well encountered a barely productive M-4 sand, which was almost completely faulted out, according to Rice.

He noted the initial 3-D interpretation revealed several undeveloped fault blocks in the area.

Subsurface and 3-D mapping identified other potential targets besides the M-4 sand. These included the shallower M-2 sand – a known producer

See **Corpus Christi**, page 26



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Short Courses Set For San Antonio

The abstracts deadline has come and gone, the technical program is being prepared and detailed planning is getting serious for the AAPG Annual Convention, to be held April 20-23 in San Antonio.

The meeting's theme is "Deliver the Conventional: Pursue the Unconventional," and the program announcement and complete technical program will be available with the January EXPLORER.

Some specifics already are known, however, including the short courses that will be offered both before and after the meeting.

Included in that list is Coalbed Methane and Shale Gas Exploration Strategies: Core Workshop for Sorbed Gas Reservoir Systems, offered by EMD.

Short courses include:

✓ By-passed Pays and Plays: Case Studies and Techniques for Success, offered Saturday, April 19.

✓ Fundamentals of Gas-Hydrate Resource Evaluation, April 19.

✓ Principals of Geologic Carbon Sequestration, April 19.

✓ Risk Analysis and Decision Making in E&P: Evaluating Plays and Prospects to Efficient Appraisal and Development, a two-day course offered Saturday and Sunday, April 19-20.

✓ Near-Surface Seismic Reflection Processing, offered April 19 full-day and April 20 half-day.

✓ Seismic Expression of Structural Styles: A Modeling Approach, April 20. For students and faculty advisers.

✓ Siliciclastic Shelf Margins Revisited April 20.

✓ Careers in the 21st Century, April 20.

✓ Professional Ethics and the Geologist, offered April 20 from 1-3 p.m.; April 21 from 4-6 p.m.; April 22 from 4-6 p.m.; and April 23 from 11:30 a.m. to 1:30 p.m.

✓ Fundamentals of ArcGIS for the Petroleum Industry, April 24.

✓ 3-D Environmental Site Characterization and Groundwater Modeling with HydroGeo Analyst, April 24.

For details on these and other convention events watch for the announcement in the January EXPLORER, and go online to www.aapg.org. □

Corpus Christi

from page 24

in the area – along with sands deeper than the M-4, ranging through the M-10.

The M-2 and M-4 sands worked as predicted in the partnership's initial well at Encinal Channel, but the deeper sands were wet. The well was dually completed after a vertical seismic profile (VSP) was recorded, revealing that the mapped M-4 reflector was in the wrong position. The correct reflector had an amplitude signature, which led to extensive development of the M-4 sand.

Further review of the data, now mapping on the deeper M-4 reflector, revealed a small cross fault segmenting the reservoir and buried below the original mapping reflector, Rice noted. This indicated very small faults had the potential to trap the M-4 and to segment larger fault blocks.

Finding Faults

The second well the partnership drilled in Encinal Channel was the Sabco 48 #7, where a couple of deeper sands were completed but failed to produce economically, while the M-4 sand was fully loaded, according to Rice.

He noted it has become the champion producer in the field, having now made approximately 13 BCF and 400,000 barrels of condensate.

The partnership's focus shifted entirely to exploiting the multiple M-4 fault blocks after a third well once again failed to find deeper commercial production.

The result of this new focus was 17 successful wells and three dry holes, leading to peak production of 60 MMCFG/D, with the added production to date tallying approximately 40 BCF and 800,000 barrels of oil.

Early in 2007, the wells were still kicking out 20 MMCFG/D.

"The main thing was finding that M-4 sand and finding it much more faulted than we expected," Rice said. "We found a whole lot of fault blocks you couldn't see with subsurface mapping – and that's really the story of this whole thing."

"An old Cities Service map constructed around 1967 shows what they thought it looked like when they quit drilling," Rice said. "The map was so simple, and that's all you could do is subsurface control."

"The other big thing was once we got on the right reflector after running the initial VSP, we found there was an amplitude anomaly and the fault blocks that basically had it were the best ones," Rice noted. "We started off one leg too high, and when you're on the wrong leg – amplitude or not – it's wrong."

Using What You Have

Rice emphasized they really didn't find anything startling or new but were merely exploiting a field that was already there.

"To a degree, it's the story of 3-D," he said. "There are hundreds of these same things where people went in and shot old fields and found a bunch of reserves."

"But there's nothing like a great 'clue' well to help initiate a project," he added.

For a geologist, there's also nothing quite like watching your well being drilled while enjoying the comfort of your own home.

"I'm three houses from the bay, so it's in my front yard," Rice said, "and at the (GCAGS) convention we'll be looking out at the wells."

"Every Texas geologist should be able to see his drilling rig from the front yard." □

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Getting to the Bottom of the (Organic) Matter

Deep Seafloor Seep Habitats Probed

By BARRY FRIEDMAN
EXPLORER Correspondent

During the previous two years the Minerals Management Service (MMS) and the NOAA Ocean Exploration had expeditions to the continental slope in the Gulf of Mexico to explore and survey areas heretofore not seen.

Deep, deep areas.

The "cruises," as they were called, used manned submersibles to explore first-hand the hard-bottom habitats and seeps located distances 3,280 feet down.

The intent of the expeditions – one aboard the *Alvin* in 2006, and most recently, the *Jason*, in 2007 – was to learn more about chemosynthetic communities

Harry Roberts leads a group of geologists and geoscientists who will present both a poster and paper at the GCAGS Annual Convention, which will be held Oct. 21-23 in Corpus Christi, Texas.

The poster "Exploration of the Deep Gulf of Mexico Slope Using DSV *Alvin*: Site Selection and Geologic Character" will be presented by the group from 9-11 a.m. on Tuesday, Oct. 23.

A paper on the same subject will be given at 4:30 p.m. that same day.

that are associated with surface gas hydrates, which may be used as a clean-burning fuel in the future.

Specifically, there was work done on the chemosynthetic habitats, the diversity of the animal communities, their



Photo courtesy of Harry Roberts

Getting ready to go deep: Scientists preparing for another dive in the *Alvin*, a mission to better understand the dynamics and characteristics of the Gulf of Mexico slope.

interaction with the environment and the biological processes that facilitate or hamper these connections.

Harry Roberts, an AAPG member and Boyd Professor in the Department of Oceanography and Coastal Sciences and director of the Coastal Studies Institute at Louisiana State University, was on both cruises.

The findings, he said, show that these

chemosynthetic communities are, in fact, supported by sulfide and hydrocarbons.

Planning Pays Off

Before the expeditions, Roberts, in conjunction with AAPG members Bill Shedd and Jesse Hunt (both of MMS), reviewed large volumes of 3-D seismic data held by the MMS New Orleans office



and used for regulatory purposes of the agency.

Roberts says both, especially Shedd, were invaluable in helping plan and direct dives.

Further, as to this working environment between MMS and NOAA, Roberts was impressed and heartened.

"Both were very supportive of the objectives of the overall project," Roberts said, "and went out of their way to help the researchers meet their research goals."

Having a better understanding of the Gulf's deepwater regions is important – some might say necessary – because seven of the top 20 oil fields in the United States (ranked by liquids proved reserves) are located in federal deepwater areas.

According to MMS, deepwater fields in the Gulf of Mexico contribute 1 to 1.6 million barrels of oil a day.

See **Deep Dive**, page 32

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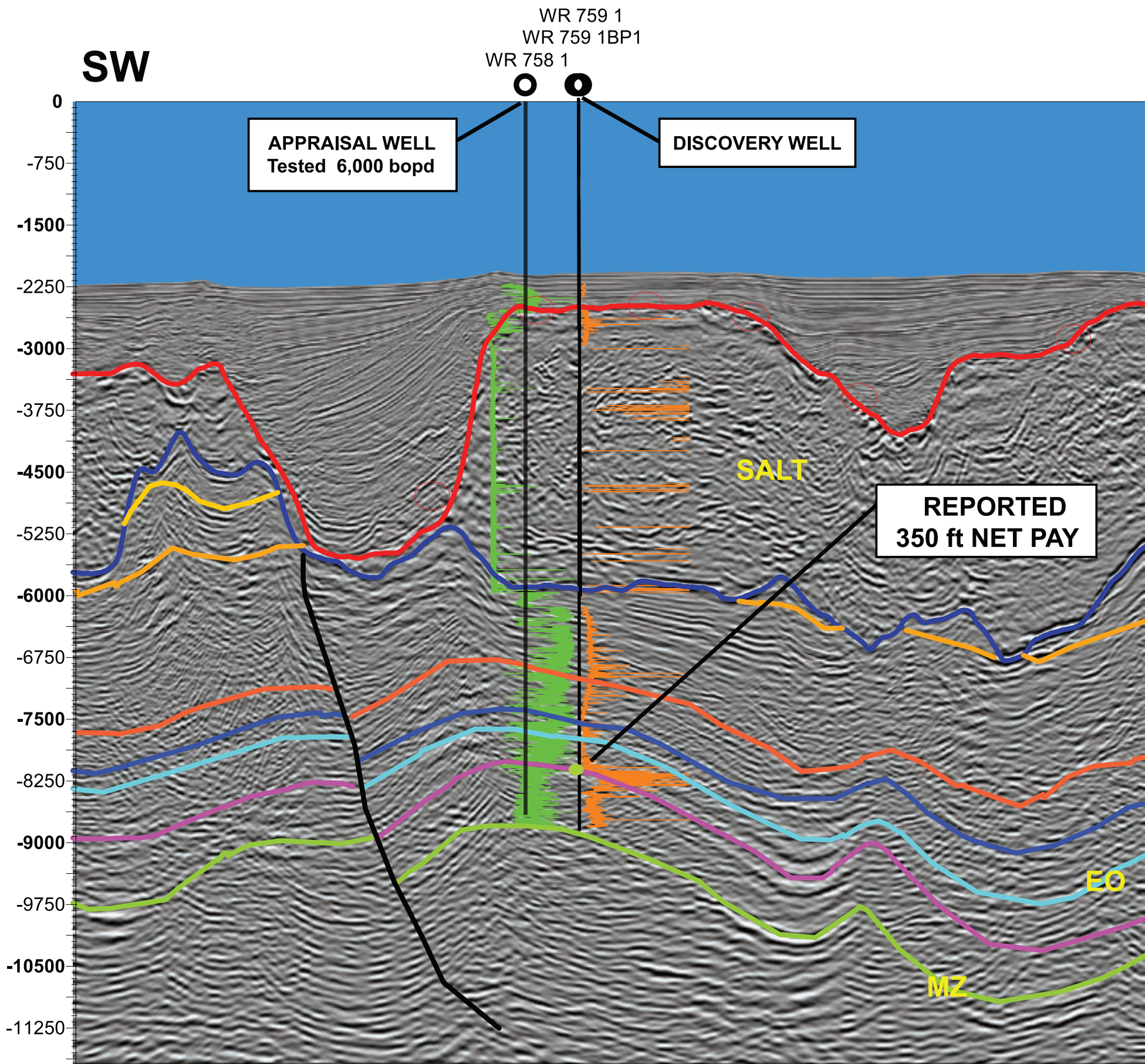
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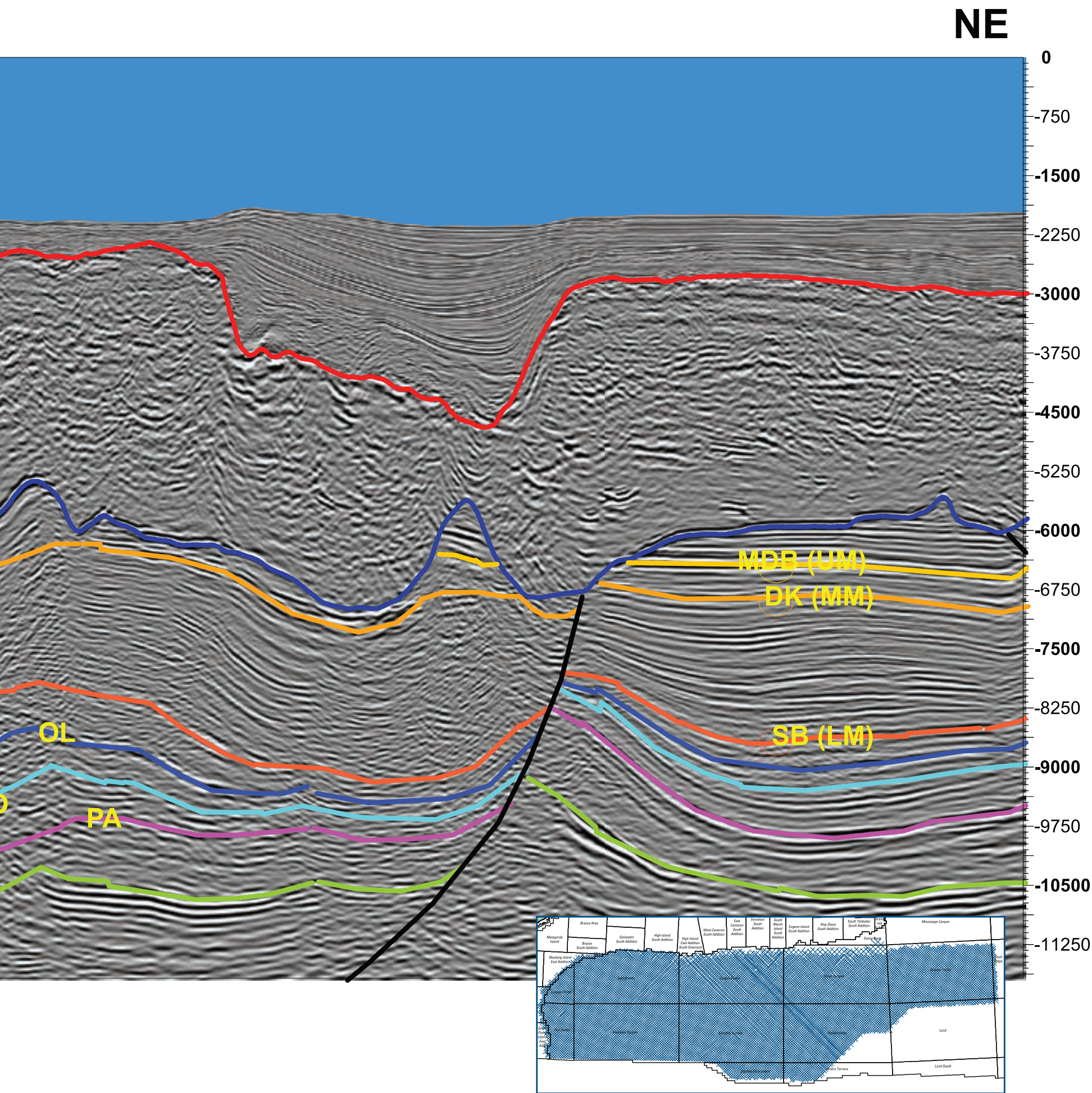
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Seafloor Got Several Looks

The manned nature of the submersibles was one of the more engaging aspects of the deepwater Gulf of Mexico cruises that Harry Roberts led – but these expeditions were not just undertaken for their novelty.

Roberts talks of the five-stage process in doing the work:

- ✓ Identifying dive sites by using the best remotely sensed and 3-D seismic data possible – and that Roberts said, “put us in the ballpark.”



Roberts

- ✓ Following up on the data via a drift camera.

- ✓ During the first year of the expedition, using approximately a month of *DSV Alvin* time to explore and sample the 10 sites selected from seismic and photoreconnaissance.

(Roberts said a manned submersible is great for viewing the seafloor, even though the dive time is limited – usually four-five hours of bottom time at the depths they were diving – and only a finite number of samples can be collected.)

- ✓ After the *Alvin* dives were completed, the team had a “first cut” at

analyzing the project data sets, and the most important biological-geological sites were identified.

(Roberts said that high-resolution sub-bottom profiles, side-scan sonar swaths and multi-beam bathymetry provided a better understanding of the detailed geologic framework of each of the four sites – and how the biological communities fit in.)

- ✓ Detailed multi-beam bathymetry surveys were then done on the *Jason*, exploring a few new sites to fill in data gaps.

– BARRY FRIEDMAN

Deep Dive

from page 28

Roberts, a marine biologist, says he chose the specific dive sites based on analysis of 3-D seismic data.

Further, Roberts believes the *Alvin*, where he was co-chief scientist with Charles Fisher from Penn State, could be classified more as reconnaissance, while the *Jason* is designed more for detailed sampling and photo documentation.

Both provided data that is still coming in.

Bonus Coverage

And now that more of the data is in ... what's new?

First, a little history. “The objective was to extend our knowledge of chemosynthetic communities and the hydrocarbon seep/vent environments that support them from the upper slope (<1,000 meters water depth) to the deepest parts of the northern Gulf,” Roberts said.

In fact, according to MMS, 50 percent of leased acreage in the GoM is in water greater than 1,000 feet.

The widespread existence of these hydrocarbon seep habitats and the specialized communities supported by them on the little-known middle and lower parts of the continental slope were, in fact, evident and abundant.

“We found that both strike and dip variability in geology and geochemistry of deep seep settings supports surprisingly high density and diversity in both macrofauna and microfauna.”

Roberts said that by the end of the latest cruise it was apparent that hydrocarbon seepage supports abundant production of biomass in the deepest parts of the Gulf and that the specialized communities are not confined to the upper slope.

“In the process of making these discoveries concerning the biology, we as geologists and geophysicists significantly improved our knowledge of the seafloor,” he said, “and what the remotely sensed 3-D seismic data was telling us about migration pathways and seafloor response.”

That's All, Folks (?)

Perhaps somewhat surprisingly, as productive as the expeditions were, there are no plans for future ones.

Roberts said at current, funding will support only data analysis, interpretation and report writing.

He adds, however, that MMS has another study on deepwater corals that could dovetail with this project very well.

“The team of geoscientists who worked on this project feels confident that the methodologies used on previous dive-related studies and improved on the CHEMO III study could be used effectively to find the most probable deepwater coral habitats.”

All in all, Roberts was impressed by the deep-diving ROV.

“This was only my second time ... and I must say I was impressed with the capabilities,” he said. “It had a full complement of cameras and sampling capability.”

While his scientific experiences on both the *Alvin* and the *Jason* have been and will continue to be chronicled, he does have a preference – albeit a purely personal one.

“The one thing I like about the *Jason* is that four hours into the dive when you had to go to the toilet, you just got out of your chair in the recording van and walked to the ship's toilet.

“This is not easy to do when you're submerged 8,000 feet in *Alvin*.” □



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*Curiosity Attracted Picou***Paleo Fascination 'A Calling'**

By BARRY FRIEDMAN
EXPLORER Correspondent

"There are paleontologists and then there are paleontologists," the much-honored paleontologist Edward Picou says proudly.

And make no mistake: Picou, an AAPG Honorary Member who recently was inducted into the Louisiana State University College of Basic Sciences Hall of Distinction, knows something about the passion and focus it takes to be a geologist, generally, and a paleontologist, specifically.

But technical, scientific and geologic matters aside, Picou has a more personal, almost artistic explanation for why he has spent so much of his life doing what he's done.

"As for what motivated me to become an economic micropaleontologist, it was the desire to sort out the structure and stratigraphy in wells," he said.

"In a way, examining a set of samples on a well, which consists of a sample of each 30-foot interval, is much like reading a mystery novel," he said. "The reader is anxious to get to the next page or end of the book to see how the story ends.

"It is much the same examining well samples – the curiosity factor."

For Picou, geology is as much about the adventure as the outcome.

"I often told my managers that being an economic paleontologist is much like having a calling to the cloth – becoming a minister or priest. It isn't something that is widely accepted."

From the Beginning

Picou, a certified petroleum geologist, was a geologist in various capacities for Shell Oil for 34 years, being named an exploration consultant in 1989.

In addition to being widely recognized as one of the "gentlemen" of AAPG, he is famously known for his work developing the application of biostratigraphic zonations for Cenozoic exploration and development in south Louisiana and the offshore of the Gulf of Mexico.

Born, raised, attended school, worked, lived and now retired in Louisiana, he has been at the forefront of, in and around Gulf of Mexico research and exploration for the past 50 years.

Picou has played key roles in Gulf Coast paleontology, both in the private and public arenas, and has served as a mentor for a generation of paleontologists. He counts among his greatest successes his involvement in the publication of the *Gulf of Mexico Basin Biostratigraphic Index Microfossils: A Geoscientist's Guide - Oligocene Through Pleistocene*.

Calling this book a "Rosetta stone" for key fossils encountered in Gulf Coast wells, he said, "It was my very good friend John Armentrout (current AAPG vice president-Sections) who asked me to pull together a group of paleontologists to cross-reference the name of every microfossil of any use to biostratigraphers in the Gulf Coast.

"Many working sessions were required to hash out differences and come to a unified decision regarding each



Ed Picou, left, during his induction into the Louisiana State University College of Basic Sciences Hall of Distinction.

microfossil," he said.

When asked, though, why his passion kept him near home, he talked of necessity and circumstance.

"Remember," he said, "that the development of geophysics, with its wonderful seismic lines that allow a display of the subsurface, was many decades into the future. Consequently, by the early 1930s most oil companies drilling the Gulf Coast area employed micro-paleontologists. The main purpose was to establish a tie, or correlation, of the

sequences of sands and shales between wells. Operators wanted to know if their well had penetrated to the same subsurface level of the discovery well drilled just down the road or across the county.

"In these early days the microfossils were the only means of making any stratigraphic sense of the monotonous layers of sediment being penetrated."

The Choice

Picou joined Shell after World War II, leaving LSU before attaining his Ph.D. – something, to this day, he recalls with ambivalence.

More on that in a second.

"By the time I joined Shell Oil in 1957, the subsurface sequences drilled onshore were fairly well defined and technical papers were published on the zonal schemes," he said. "However, exploration in the offshore Gulf of Mexico was just then accelerating. By 1960, I transferred to our offshore exploration staff and began a long involvement with the development of both regional and local zonal schemes in the ever-expanding drilling in the Gulf.

"After the 1962 lease sale, Shell was drilling wildcats about 100 miles down dip from the last point of stratigraphic control," he continued. "It was an exciting time for the entire geologic staff, especially when oil and gas was discovered."

In fact, during the span of his 34-year career at Shell, Picou "witnessed the

See **Picou**, page 36



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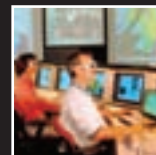
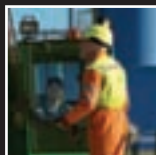
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USGS Chief Wants the Facts

U.S. Geological Survey Director Mark Myers cited "the need for a national scientific framework to deal with societal issues" at a luncheon address at the Mid-Continent Section meeting held in Wichita, Kan., in September.

"We are lacking in base line data in many areas," Myers said, "and it should be a national priority to provide facts based on sound science to make the hard decisions that are before us."

He said it is the goal of the USGS to be proactive in gathering the data along with partners, including the state geologists.

Myers, an AAPG member, told the lunch crowd that with energy demand

growing and the near future of a hydrocarbon-based energy engine a certainty, the "energy trade-offs (to adapt to non-hydrocarbon energy) must be addressed, including the bio-fuels requirements for land and water usage."

He noted that infrastructure needs – including bridges and natural hazard planning – are pressing and "the data are not adequate enough for the task of providing the base for sound decisions. We need more data and need to get it integrated, including with the biological scientific community."

In response to a question, Myers noted that the lawmakers on both sides of the aisle are sincerely looking for

answers and are open for scientific guidance.

The Mid-Continent meeting drew about 450 persons and featured two concurrent technical sessions as well as five plenary sessions, along with an exhibits area, field trips and short courses.

The Section also honored AAPG past president Robert D. Cowdery by naming its student scholarship program in his honor.

At the meeting, \$5,000 was awarded for the best student paper, with four additional \$2,500 awards for the second and third place in oral and poster presentations.

– LARRY NATION

Picou

from page 34

almost complete drilling of the shelf areas in the Gulf and participated in about a dozen deepwater discoveries before retiring in 1991."

Since then, he has served on advisory councils, been active in the New Orleans Geologic Society, served as editor of the monthly NOGS LOG and was instrumental in the formulation of the AAPG BULLETIN on CD-Rom.

Receiving AAPG Honorary Membership "is the one recognition I cherish most."

"As I often remind [students], if you were a medical doctor you would surely be a member of the American Medical Association, which is the 'standard-bearer' for the medical profession. For petroleum geologists, AAPG is our standard-bearer."

The Tie That Binds

There is, though, something special about his admission to a Hall of Distinction from a university that is such a part of his life and work.

In short, it's home.

But now, about that ambivalence.

For Picou, after retirement he came face to face with an old friend, a mentor, who was bittersweet at his friend's career path.

Harold V. Andersen, or "Doc Andy," as he was known, along with Henry V. Howe was one of the founding fathers of the geology department at Louisiana State University.

"As I was retiring from Shell Offshore, on one of my visits with Dr. Andersen, he confided to me that he was disappointed in me because I hadn't stayed at LSU for a Ph.D." those many years ago, Picou recalled.

Andersen had hoped Picou would replace him in the teaching of micropaleontology.

"What a wonderful, yet perplexing, statement," Picou says of his friend's reaction.

"Perhaps, I did miss a wonderful academic experience, but – that's all hindsight. However, at Shell I mentored a whole generation of paleontologists during the two-plus decades I was Division Paleontologist."

And for that, Picou says he has no regrets: "During all those years with Shell I was never too far from LSU and the geology department not to maintain a constant relationship with the faculty."

Still, he felt it pull on him.

"Perhaps this is why I chose to endow an AAPG University Restricted Grant-in-Aid for the Geology and Geophysics Department at LSU."

As for the future of the industry, Picou strikes a cautionary note about perception.

"Many individuals have the misconception that geology is a 'low tech' profession. Nothing could be more false," he said. "Today's geologist is expected to handle extremely sophisticated projects and be able to work with all sorts of computer programs."

"While the glamour of being out in the field looking at rock exposures is wonderful, the reality is few geologists today actually have that opportunity."

He is less ambivalent, though, about the state of geology in academia, especially his field.

"Sadly, today very few university geology departments offer degrees in micropaleontology," he observed. "In the U.S., I doubt if there are more than three or four. My old company, Shell, over the past few years, has hired several new paleontologists; however, all were educated overseas."

"As the world's population continues to grow and metropolitan areas expand," he said, "having a thorough understanding of geology will become increasingly important." □

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Gibbs Named Halbouty Award Honoree

Meissner to Receive Powers Award

By SUSIE MOORE
EXPLORER Staff Writer

Fred F. Meissner, an honored college professor who pioneered the concept that methane gas could be extracted from coalbeds, has been named the 2008 recipient of the Sidney Powers Memorial Award.

Meissner, who continues his long career at Colorado School of Mines in Littleton, Colo., heads the list of those being honored this year by the Association.

Meissner, cited as an AAPG Honorary Member in 2001, also won AAPG's Grover E. Murray Memorial Distinguished Educator Award in 2005.

Joining him at the top of the awardees list is AAPG past president and Honorary Member James A. Gibbs, with Five Star Energy in Dallas, who is this year's recipient of the Michel T. Halbouty Outstanding Leadership Award.

AAPG awards, nominated via the Advisory Council and approved by the Executive Committee, are presented annually to recognize individuals for service to the profession, the science, the Association and the public.

As a recipient of the Powers Medal, Meissner is bestowed the Association's highest honor.

Meissner and his fellow honorees will be recognized at the opening session of the 2008 AAPG Annual Convention, which will be held April 20-23 in San Antonio.



Meissner



Gibbs

Interviews with Meissner and Gibbs will be published in a future EXPLORER, and biographies and citations of all award winners will be included in a future BULLETIN.

Those award winners approved by the Executive Committee and who will be honored along with Meissner and Gibbs in San Antonio are:

Honorary Member Award

Presented to members who have distinguished themselves by their accomplishments and through their service to the profession of petroleum geology and to AAPG.

□ George Eynon, Canadian Energy Research Institute, Calgary, Canada.

□ Donald W. Lewis, consultant, Lafayette, Calif.

□ Peter M. Lloyd, Heriot Watt University, Falcon, France.

□ Ernest A. Mancini, University of Alabama, Tuscaloosa, Ala.

□ Stephen A. Sonnenberg, Sonnenberg Associates, Golden, Colo.

□ Jack C. Threet, independent, Houston.

Outstanding Explorer Award

Presented to members in recognition of distinguished and outstanding achievement in exploration for petroleum or mineral resources, with an intended emphasis on recent discovery.

□ Dudley J. Hughes, Hughes Oil Inc., Flowood, Miss.

Distinguished Service Award

Presented to those who have distinguished themselves in singular and beneficial long-term service to AAPG.

□ Katharine Lee Avary, West Virginia Geological and Economic Survey, Morgantown, W.V.

□ John "Jack" D. Edwards, University of Colorado, Boulder, Colo.

□ Barry A. Goldstein, PIRSA, Adelaide, Australia.

□ Douglas C. Peters, Peters Geosciences, Golden, Colo.

Grover E. Murray**Distinguished Educator Award**

Presented for distinguished and outstanding contributions to geological education, both at the university level and toward education of the general public.

□ Robert S. Gray, Santa Barbara City College, Santa Barbara, Calif.

□ S. George Pemberton, University of Alberta, Edmonton, Canada.

Special Award

Presented to individuals and organizations whose area of work may not qualify for one of the existing awards, but is worthy of Association recognition.

□ Nikolai V. Lopatin, Geosystem Institute, Moscow, Russia.

□ Steven L. Veal, AAPG Europe Office, London, England, and DCX Resources.

Public Service Award

Presented to recognize contributions of AAPG members to public affairs – and intended to encourage such activities.

□ Ashton F. Embry, Institute of Sedimentary Petroleum Geology, Calgary, Canada.

□ Douglas C. Ratcliff, Jackson School of Geosciences, Austin, Texas.

Pioneer Award

Presented to long-standing members who have contributed to the Association and who have made meaningful contributions to the science of geology.

□ Leonard Frank Brown Jr., Bureau of Economic Geology, Austin, Texas.

See **Awards**, page 45



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17 - 19 **Basics of the Petroleum Industry**

Houston 3 day course, instructor Mr. H. Miller

22 - 26 **Development Geophysics**

Houston 5 day course, instructor Dr. T. Wittick

29 - Nov. 2 **Descriptive Lithology Analysis of Cuttings and Cores**

Houston 5 day course, instructor Mr. R. Merrill

29 - Nov. 2 **Applied Subsurface Geological Mapping**

Dallas 5 day course, instructor Mr. S. Agah

November, 2007

5 - 9 **Principles of 3-D Seismic Interpretation**

London 5 day course, instructor Dr. Mangat Thapar

12 - 16 **Integration of Log and Seismic Data**

Houston 5 day course, instructor Dr. T. Wittick

26 - 30 **Geophysics for Geologists and Engineers**

Houston 5 day course, instructor Dr. T. Wittick

December, 2007

3 - 7 **Applied Subsurface Geological Mapping**

Houston 5 days course, instructor Mr. J. Brewton

3 - 7 **Seismic Survey Design, Acquisition and Processing**

Kuala Lumpur 5 days course, instructor Dr. M. Thapar

10 - 11 **Quick Look Techniques from Prospect Evaluation to Reserves Estimates**

Houston 2 days course, instructor Mr. J. Brewton

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GEOPHYSICALCORNER

Was That Survey Crew Sober?

(The Geophysical Corner is a regular column in the EXPLORER, edited by Bob A. Hardage, senior research scientist at the Bureau of Economic Geology, the University of Texas at Austin. This month's column is titled "Randomness in 3-D Seismic Survey Design.")

By ENGIN ALKAN
and BOB HARDAGE

Considerable effort can be expended in onshore 3-D seismic data acquisition in surveying the coordinates where source-station and receiver-station flags are placed, because these flags will later instruct field personnel exactly where to plant geophones and vibrator drivers exactly where to position their vehicles.

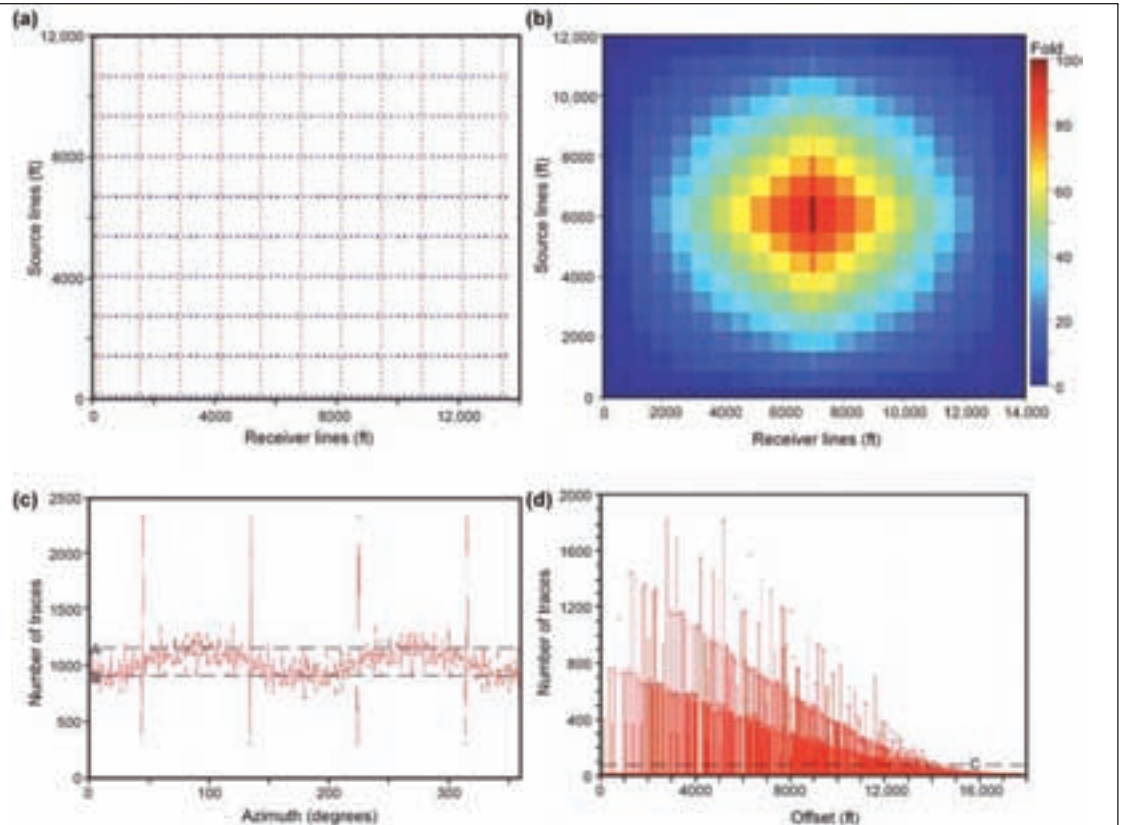
Sometimes there is a long delay (perhaps weeks or months) between the deployment of these station flags and the arrival of the seismic crew. In such instances, a station-surveying crew may visit the prospect a second time and invest additional time and expense to reset station flags that have disappeared for any reason.

The justification for this emphasis on precise, pre-survey station-flag positioning is partly tradition that holds over from days when GPS technology was not available and there was no other way to define the X, Y and Z coordinates of each source and receiver station.

But the justification also is partly based on seismic data-processing requirements. Numerous data-processing algorithms require seismic data to be sampled at regularly spaced intervals in X, Y space.

To ensure correct data processing, some explorationists exert a serious effort to

Figure 1 – (a) A 3-D seismic data-acquisition grid consisting of source and receiver stations positioned at precise regular intervals. (b) Stacking fold across the acquisition template. (c, d) Offset and azimuth distributions have large outliers that create undesirable oscillations of bin statistics. Data constraints **A, B** and **C** labeled on panels c and d are discussed in the caption for figure 2.



positioning source-station and receiver-station flags at precise, regularly spaced intervals before any data-acquisition activity is initiated.

* * *

An issue to consider is, "Is it necessary to

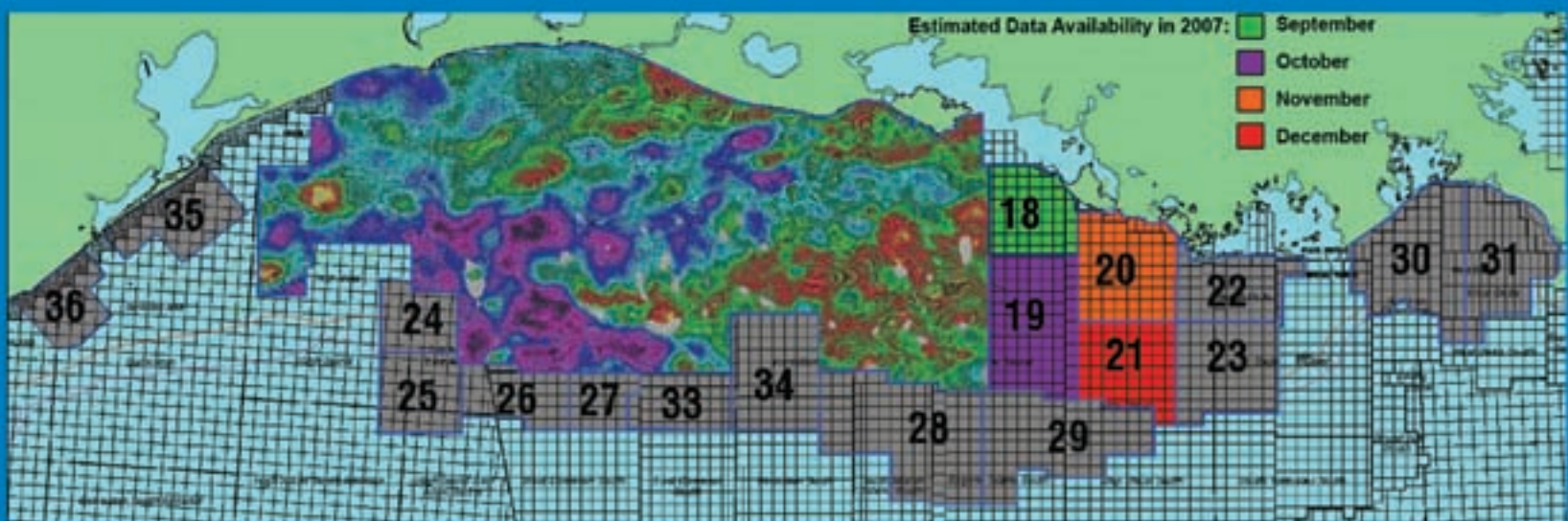
position station flags accurately before a seismic survey begins, or is it only necessary to know station coordinates accurately after they have been occupied?"

Almost every vehicle and every person on a modern seismic crew has a GPS system, and their positions are known at all times.

The GPS systems in vibrator trucks define precisely where the source is positioned; GPS units carried by the geophone-deployment crew define precisely where they planted the geophones.

Regarding the issue of regularity of data continued on next page

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sampling, powerful algorithms exist to convert irregularly sampled data to regularly sampled data. Thus, if post-survey station coordinates are known with high accuracy, there is less need to expend cost in pre-survey work to position station flags at precisely known coordinates.

If vibrator drivers and geophone-deployment crews are allowed to position their stations according to their best judgment during the course of a seismic survey (rather than following trails of pre-survey positioned flags), the stations will be positioned with some amount of randomness and will not be at precise, regular intervals.

This randomness in the positions of source and receiver stations can be beneficial.

For example, consider the two seismic data-acquisition concepts illustrated as figures 1 and 2. Great care and expense were taken to make the acquisition geometry in figure 1 have source/receiver stations at precise, regular intervals. In contrast, the erratic positioning of the stations in Figure 2 suggests one question:

"Was the station-surveying crew ill or inebriated?"

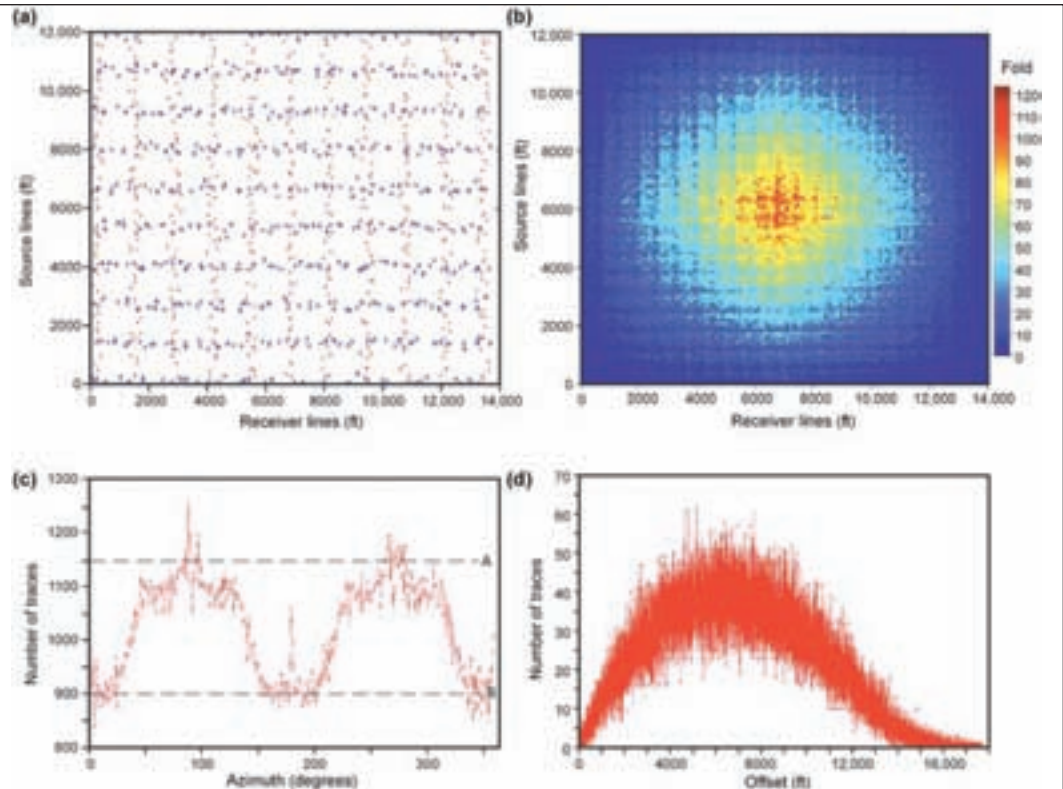
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Now look at the plots of stacking fold, source-to-receiver offsets and source-to-receiver azimuths that accompany each acquisition geometry.

The random-station geometry increases stacking fold in many bins by 10 to 20 percent (panel b in each figure), which is good. Randomness in station positions does introduce minor, erratic, bin-to-bin variations in fold, but these variations are not a serious problem in this example.

More importantly, randomness creates more uniform distributions of offset and azimuth than does the regular-station

Figure 2 – (a) The same data-acquisition grid as in figure 1, but with source and receiver stations positioned at irregular, random coordinates. (b) Stacking fold. (c, d) Offset and azimuth distributions have minor outliers and are less erratic than the distributions in figure 1. The data in c fit between values **A** and **B** in figure 1c; the data in d fit below line **C** in figure 1d.



geometry (compare panels c and d in figure 1 with their equivalents in figure 2). The offset and azimuth behaviors created by random-station geometry (figure 2) are preferred for amplitude-vs.-offset and attribute-vs.-azimuth studies.

There are situations where source and receiver station coordinates *must* be known with precision before any seismic data-acquisition commences:

- ✓ In archeologically sensitive areas, regulatory agencies have to inspect each station to determine whether archeological damage will occur if vehicles or people occupy the station coordinates.

- ✓ Some farmers want to know exactly where vehicles will travel across croplands

before they will allow a seismic crew to enter their property.

- ✓ Some pipeline companies insist on knowing exactly where each source station is relative to each of their underground lines.

The list goes on and on.

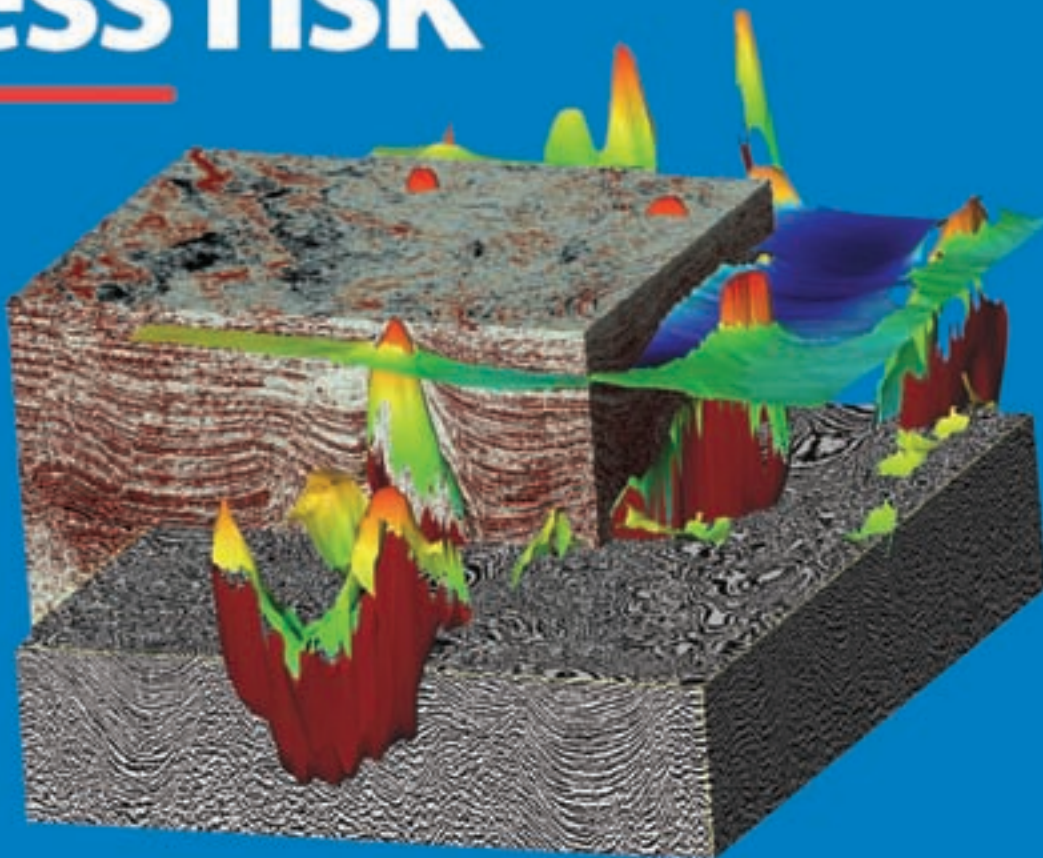
We are not advocating that seismic source and receiver stations be positioned willy-nilly across a prospect; we intend only to show that in some seismic surveys, accurate and costly pre-survey positioning of source and receiver stations is not necessary – and that the randomness introduced into an acquisition geometry by casual positioning of source/receiver stations can be advantageous if the amount of randomness is kept within reason.

A good analogy to the introduction of randomness into station positioning is the use of salt on food. A modest amount does considerable good; too much can be a disaster.

Perhaps it is time to think about relaxing some of the time demands and expense we invest in precise pre-survey station positioning in those numerous situations where it is really not necessary to do such pre-survey effort. □

(Editor's note: Engin Alkan is a graduate student at the Jackson School of Geosciences. His thesis work is directed by Bob Hardage and focuses on 3-D seismic data acquisition.)

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Contacts Made at Lawmaker Meet

(Editor's note: This column is a joint offering from Rick Ericksen, president-elect of the Division of Professional Affairs, and David Curtiss and Don Juckett of GEO-DC.)

We enjoyed the opportunity of working together with Governmental Affairs Committee Chair (GAC) Carl J. Smith and DPA President Tom Ewing to organize and staff the AAPG booth at the National Conference of State Legislators (NCSL), hosted by Massachusetts in Boston.

It was the first time that DPA's Governmental Affairs Committee and the GEO-DC had a presence at the annual NCSL with its own exhibit booth. Previously the GAC has shared exhibit booth space with the AGI, AIPG and AEG.

Upon the recommendation of the GAC this year it had its own exhibit booth to communicate its perspectives on energy and related issues that impact its membership.

It is our assessment that the GAC/GEO-DC should continue its participation at the NCSL with its own booth.

* * *

The exhibit had a significant amount of traffic that ranged from legislators from states that were in attendance along with legislative support staff, and also many who were representatives from state agencies.



Rick Ericksen, left, presents a mounted ammonite specimen to former Illinois State Sen. Steve Rauschenberger.

While it would be an exaggeration to say that we had substantive conversations with everyone who left a business card, we did acquire business cards from legislators and staff from 42 states, the District of Columbia, South Africa, a member of the Canadian Parliament and a representative from the United Nations.

As a way to draw attention to the exhibit, two mounted ammonite specimens were given away with the random drawing of business cards on Monday and Tuesday of the conference. One of the recipients was a state

legislator from Maryland, and the other recipient was the immediate past president of the NCSL and a state senator from Illinois.

At the exhibit there was information concerning AAPG's position statements, geologic road maps, etc. There was a great deal of interest expressed by several visitors concerning educational materials that may be available to the states via the AAPG.

There also was a considerable amount of interest expressed as to the hydrocarbon potential of the eastern United States, and issues related to that potential.

* * *

As with any booth display, the people who engage come from a variety of backgrounds and interest. We answered many questions about AAPG, resource endowment, education and job opportunities; and we responded to a broad scope of policy questions.

At the same time, we listened to individuals – many with favorable leanings toward the oil and gas industry and the energy-related activities in their states.

We each individually made commitments to follow up with information. Here are a couple of examples.

✓ One Oklahoma legislator had mentored a geology student who was entering his second year of

undergraduate study. The legislator requested that we send the student a letter encouraging him to consider a career in petroleum geology.

We followed up with a personal letter and information about AAPG as a professional organization, highlighting the services and benefits of the Association.

✓ A legislative staffer from South Carolina engaged us in conversation about OCS leasing on the Atlantic coast. His assignment was to develop draft legislation that would petition for relief from the federal OCS moratorium.

We discussed the actions taken by Virginia in its legislative initiative and committed to providing copies of that legislation as well as contacts in the Virginia legislature among the proponents who had successfully passed Virginia's moratorium relief legislation.

That initiative by Virginia has resulted in the Federal OCS acreage offshore Virginia to be included in the Minerals Management Service 2007–2012 OCS Leasing program.

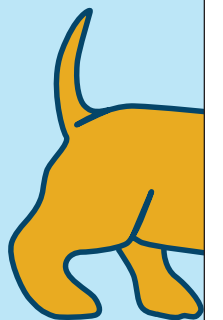
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It is anticipated that during the planning for next year's conference that attention will be paid to the educational resources of the AAPG. It also is anticipated that it would be of added

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What's in a Word?

SEC to Review Reserves Reporting

By LARRY NATION

AAPG Communications Director

In reserve estimation, one thing is more proven than probable: The numbers can be open to interpretation.

That point, which was made frequently at the Multidisciplinary Reserves Conference, held in late June in Washington, D.C., co-sponsored by AAPG and SPE, has certainly gotten the attention of the U.S. Securities and Exchange Commission.

John W. White, director of the SEC corporate finance division and a speaker at the June conference, has signaled the commission might update its methodology in response to calls from the industry.

White told an American Bar Association group in late August that the SEC has advertised for a "Professional Engineering Fellow" to assist in evaluating current disclosure requirements and new technologies that companies may use to evaluate current – and identify new – reserves.

"Based upon that evaluation, we will determine what recommendation we will make to the Commission, if any, about revisions to our current disclosure requirements," he said.

White explained that an oil and gas company with exploration activities must provide disclosure about its reserves in its filings with the SEC. It presents this information as unaudited information in the notes to its financial statements.

The company then capitalizes certain costs relating to the acquisition, exploration and development of oil and gas properties and presents them as assets in its balance sheet. The company also provides other information regarding drilling and production operations elsewhere in its SEC filings.

"Reserves are often the most important asset of an oil and gas company and may be categorized as proved, probable or possible," White explained. "Under our current rules, an oil and gas company is prohibited from disclosing any reserves other than proved reserves in a filing made with us, because of concerns that other categories of reserves are too speculative and too uncertain."

However, companies may – and generally do – include information regarding other categories of reserves in

press releases and other reports and communications.

"Under our current rules, a company determines its proved reserves based upon the results of production or flow testing from actual wells and appraisal drilling," White said. "Several groups have encouraged us to allow companies to rely on new technologies in evaluating their reserves and identifying proved reserves."

"We have not concluded that these technologies have been demonstrated to be routinely reliable for the attribution of proved reserves, although we did allow

use of such technologies in calculating proved reserves in the Gulf of Mexico following a special project we undertook," he said.

"Allowing use of such technologies would likely produce increased levels of proved reserves, but might decrease the reliability of the estimate."

In noting the importance of qualifying words in the definitions of oil and gas reserves and resources, David C. Elliott, chief petroleum adviser for the Alberta, Canada, Securities Commission, conducted a survey among the 130 participants at the June meeting in

Washington and found a wide variance in responses to meanings of estimation categories.

"This variance raises troubling questions about the manner in which reserves definitions are interpreted," Elliott wrote. "How would a user know the view taken by an evaluator – and vice versa?"

The report on the survey can be found in the GEO-DC area of the Web site, where a complete report on the meeting's sessions also is available, including PowerPoint presentations and texts of speeches. □



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benefit to determine any specific legislation, either pending or proposed, related to energy producing states that those manning the exhibit should be aware of to address those legislators/staff who may need additional information on those issues.

Additionally, it would be of benefit to have representatives from the EMD and DEG present to discuss other energy resources and environmental issues related to energy resources.

Overall the exhibit was a successful endeavor, and it is anticipated that the ensuing exhibits will be even more fruitful in getting information out to those who need unbiased information related to energy resources and environmental issues. □

(Editor's note: Don Juckett, head of AAPG's Geoscience and Energy Office in Washington, D.C., can be contacted at djuckett@aapg.org; or by telephone at 1-703-575-8293.)

FOUNDATION UPDATE

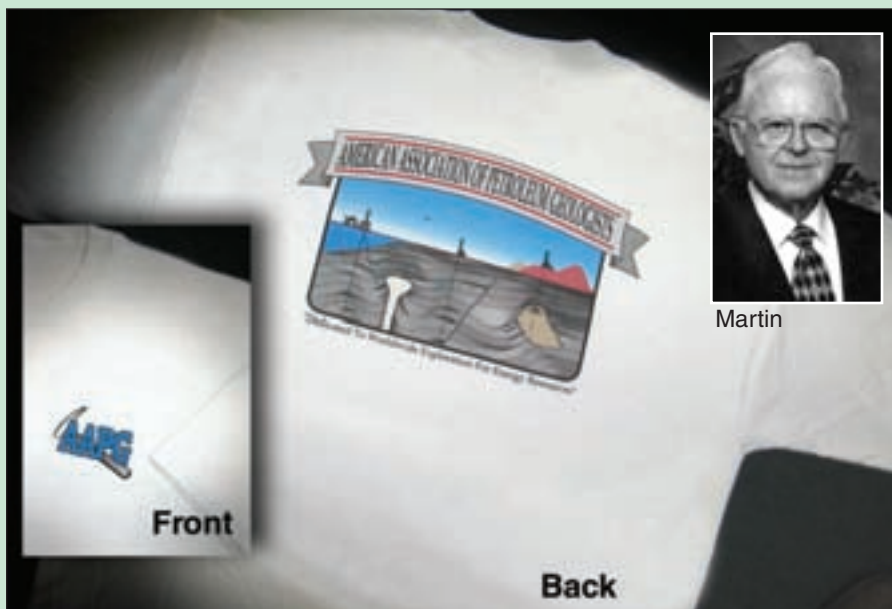
A special gift from the AAPG Foundation has provided the funds to help promote the geological profession via a t-shirt to be worn by geosciences students and professionals.

For students, receiving and wearing the shirt won't cost them a dime – and for members, the shirt represents an easy way to help support AAPG Student Chapters.

The t-shirt will be made possible by Foundation support, which will help in the production and distribution of a shirt design inspired by Trustee Associate Jack Martin.

The shirt features the AAPG banner and depicts the theme, "Dedicated to Worldwide Exploration for Energy Resources."

It depicts drilling for oil and gas in three different geographical areas, and it "gives recognition to the role of petroleum geologists in the discovery of



Martin

hydrocarbon reserves," according to Rick Fritz, the Foundation's executive director.

Portrayed in cross-section form are appropriate sub-surface structural features with simplified traps containing hydrocarbons; the traps are associated with salt dome, a fault and, in the interior area, a reef.

Martin, who had input into the shirt's design and creation, believes the shirts will help project a positive image of the profession and industry.

Thanks to the Foundation's support, the t-shirts will be distributed to students based on availability.

Students should contact Angela Taylor in the Foundation office, toll-free 888-945-2274, ext. 664, to receive their complimentary t-shirt.

Members may purchase t-shirts for \$20. All sale profits will be dedicated to AAPG Student Chapters. □

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Christy Lynn Reed
Michael John Renison
Natasha Marie Rigg
Vaughn David Robison
Raul Rodriguez
Jorge Mario Rojas

Serge Rueff
Hans H. Schneider
Martin Schoell
K.S. Sheikh-Ali
Neal Edward Siler
Sutira Sindhusen
Guy Broadis Smith
Charles Edward Stelling
Richard A. Swindell
Johannes H. Thiessen
Colin Clive Turner
Steven Loring Veal
Ariel J. Warner
Henry B. Wilkinson III
John A. Williams
Brad Calvin Wohler

Awards Fund

Dorothy Frederika Payne
Best Student Paper and Poster Award
Kevin Charles Hill
Constantin P. Vihristencu

Continuing Education Fund

Hernandez Javier Banda
Ravi T. Venkateswaran

Digital Products Fund

Alexander Ernest Marr

Texas A&M University

Matthew Frazee Fey
Randall Darius Ponder

University of Kentucky

Thomas Stephen Deen

Distinguished Lecture Fund

Rodney Jay Christensen
Paul H. Dudley Jr.
In memory of Jean Funkhouser and Billy D. Allen
Robin Loss Lyon
Richard Evan Paige
Martin Schoell

Grants-In-Aid Fund

Martha Lou Broussard
In memory of Rufus LeBlanc
John Stafford Knapp Jr.

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Herbert G. Davis
In honor of Paul and Lydia Dudley, Larry Funkhouser and Jack and Katy Threet

Robert K. Goldhammer Memorial Grant

Mark P. Cloos

Nancy Setzer Murray Memorial Grant

Barbara Murray

Ohio Geological Society Named Grant

Steven Paul Zody

K-12 Education Fund

David G. Campbell
In memory of Rufus LeBlanc
and Richard Darnell

Herbert G. Davis and Shirley A. Davis Named Grant

Herbert G. Davis
In honor of Paul and Lydia Dudley, Larry Funkhouser and Jack and Katy Threet

Thomas Mairs

Alexander Ernest Marr
Thomas Martin Parris
Serge Rueff
Lee R. Russell
Vincent Mark Stanislav
John McCamey Sweet
In memory of James A. Savage

Richard Hensler Voris

Peter W. Whaley
J. Remy Williams
Daniel Ziegler

Public Service Fund

James A. Gibbs
In memory of James A. Savage

E.F. Reid Scouting Fund

Jeffrey M. Rayner

Eugene F. Reid Dibblee Fund

Jeffrey M. Rayner

Visiting Geoscientist Fund

Herman Darman

L. Austin Weeks Memorial Undergraduate Grant Fund

James Campbell Howard
In memory of Thomas F. Ritter □

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Awards

from page 38

Wallace E. Pratt Memorial Award

Presented to honor and reward the author(s) of the best AAPG BULLETIN article published each calendar year.

□ **Graham R. Davies** and **Langhorne B. Smith Jr.**, for "Structurally-Controlled Carbonate Diagenesis: Creation of Hydrothermal Dolomite and Leached Limestone Reservoirs," which appeared in the November 2006 BULLETIN. Davies is with GDGC, Calgary, Canada, and Smith is with New York State Museum, Albany, N.Y.

Robert H. Dott Sr. Memorial Award

Presented to honor and reward the author/editor of the best special publication dealing with geology published by the Association.

□ **P.M. "Mitch" Harris** and **L.J. "Jim" Weber**, for AAPG Memoir 88, *Giant Hydrocarbon Reservoirs of the World: From Rocks to Reservoir Characterization and Modeling*. Harris is with Chevron Energy Technology, San Ramon, Calif., and Weber is with ExxonMobil, The Woodlands, Texas.

J.C. "Cam" Sproule Memorial Award

Presented to recognize and reward younger authors of papers applicable to petroleum geology.

□ **Alejandro Escalona**, for the paper "Petrophysical and Seismic Properties of Lower Eocene Clastic Rocks in the Central Maracaibo Basin." Escalona is with the University of Stavanger, Tananger, Norway.

George C. Matson Award

Presented to honor and reward the best oral presentation at the AAPG Annual Convention in Long Beach, Calif.

□ **Cathy L. Farmer**, for the paper "Structural and Sedimentological Evolution of the Ultra-Deep Gas Play Fairway – Gulf of Mexico Shelf, Texas and Louisiana."

Her co-authors are **Debra H. Phillips**, **R.H. Benthien**, **D.V. Dailey**, **B.W. Horn**, **D.G. Derbecker** and **K.L. Hargrove**. All are with BP America, Houston.

Jules Braunstein Memorial Award

Presented to honor and reward the best poster presentation at the AAPG Annual Convention in Houston.

□ **Jose I. Guzman**, **Rod Sloan**, **Shengyu Wu** and **Shaoqing Sun**, for the poster "A Comprehensive Classification of Seals Based on Worldwide Subsurface Analogs." All are with C&C Reservoirs, Houston.

Geosciences in the Media Award

Presented for notable journalistic achievement in any medium, which contributes to public understanding of geology, energy resources or the technology of oil and gas exploration. Granting of this award in any year is discretionary.

□ **Tyler Priest**, chief historian for the Association of International Petroleum Negotiators (AIPN) history project and author most recently of *The Offshore Imperative: Shell Oil's Search for Petroleum in Postwar America*. Priest also is clinical professor and director of global studies, Bauer College of Business, University of Houston, Texas. □

Athens Planning Hits Last Lap

There's one more chance for those attending the AAPG European Region Energy Conference and Exhibition in Athens, Greece, to save money on registration.

Reduced registration fees are offered through Oct. 30 – reductions that can save members \$135 off the onsite fee.

The historic conference – the first joint venture meeting between AAPG and the AAPG European Region – will be held Nov. 18-21 at the Megaron Athens International Conference Centre in the heart of Athens.

The meeting will feature a challenging and engaging technical program – 348 technical presentations that include 228 oral papers in five concurrent sessions and 120 full-day



Underhill

posters – plus a full-fledged exhibits hall and a host of social events to guarantee a memorable experience for everyone.

The meeting's theme is "Challenge Our Myths," which will include three main areas: Regional,

Technical and a Management Forum on "Energy Supply and Demand Perspective on Current Dynamics."

Among the meeting's highlights is the Featured Speaker Luncheon, which will

be presented on Monday, Nov. 19, by John Underhill, an AAPG member (and past Distinguished Lecturer and Matson Award winner) who is an expert on Greek geology, geomorphology and culture.

Those elements will be part of his talk "Where Was Odysseus' Homeland?" as he tackles the provocative question using his scientific expertise.

More information on his talk – already proving a popular draw based on advanced ticket sales – and the entire technical program and registration announcement is available online at www.aapg.org/athens.

Don't miss the chance to save money on your registration – register by Oct. 30, and the savings are yours. □

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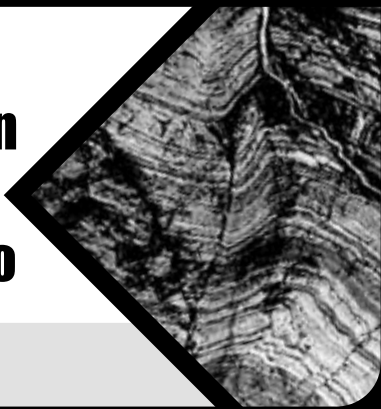
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REGIONS AND SECTIONS

(Editor's note: Regions and Sections is a regular column in the EXPLORER offering news for and about AAPG's six international Regions and six domestic Sections.)

News items, press releases and other information should be submitted to the EXPLORER/Regions and Sections, P.O. Box 979, Tulsa, Okla. 74101.

Contact: Carol McGowen, AAPG's Regions and Sections manager, at 1-918-560-9403; or cmcgowen@aapg.org.

This month's column, dealing with next year's AAPG International Conference and Exhibition in Cape Town, South Africa, includes contributions from Jeff Aldrich, Jean Malan and John Snedden, all part of the Cape Town Organizing Committee.)

By JEFF ALDRICH
JEAN MALAN
and JOHN SNEDDEN

It may seem like a long way off, but perhaps now is the time to mark your calendar for an international conference that promises to be among the most exciting and exotic ever offered by AAPG.

The 2008 AAPG International Conference and Exhibition will be held Oct. 26-29 in Cape Town, South Africa.

The theme is "African Energy – Global Impact," chosen because Africa is one of the largest hydrocarbon producers in the world, and its prominence is on the rise.

Recent activity from deepwater West Africa, the Nile Cone, the developing Rift Valley play and the exciting exploration off East Africa – along with the new licensing rounds in North Africa – have generated worldwide interest. The activity is making a global impact.

Also, the anticipated growth of the African economies in coming decades – spurred in great part by exploration success – will have tremendous implications for global energy markets. For example, the work being done in the Karoo research projects in South Africa is a model applicable to deepwater sedimentation exploration and production anywhere in the world.

An international conference in Cape Town is ideally situated to bring these African energy elements together in a global context.

Technically Superb

The technical program's call for papers is expected to be issued, and includes an intentionally "wild" format.

The five technical themes align with the "Big 5" of Africa's animal kingdom: the lion, elephant, black rhinoceros, Cape buffalo and leopard. Of those, the first three are well known and regularly sighted, and the latter two less famous and often a challenge to find.

As with Big 5 sightings, Cape Town's themes also cover the lesser practiced and studied aspects of the energy business, including coal, coal bed methane, uranium, oil and gas shale – either well-exploited in Southern Africa or in its infancy.

That means:

- ✓ The mega-scale, Vredefort dome impact crater, Namibian meteorites and layered, mafic-intrusive complexes such as the Bushveld Complex make astrogeology and analogous structures in lunar Mare deposits a logical theme and session choice.

- ✓ Combined aspects of engineering, geophysics and geology will be embraced in topics such as reservoir connectivity, micro and nanotechnologies, fluid and pressure prediction, geo-hazards, 4-D, CSEM, tight gas and many more.

- ✓ Every AAPG Division has endorsed this conference and plans to participate.

In addition to over 70 technical sessions addressing five main themes, special forums will be offered on topics of great interest, including:

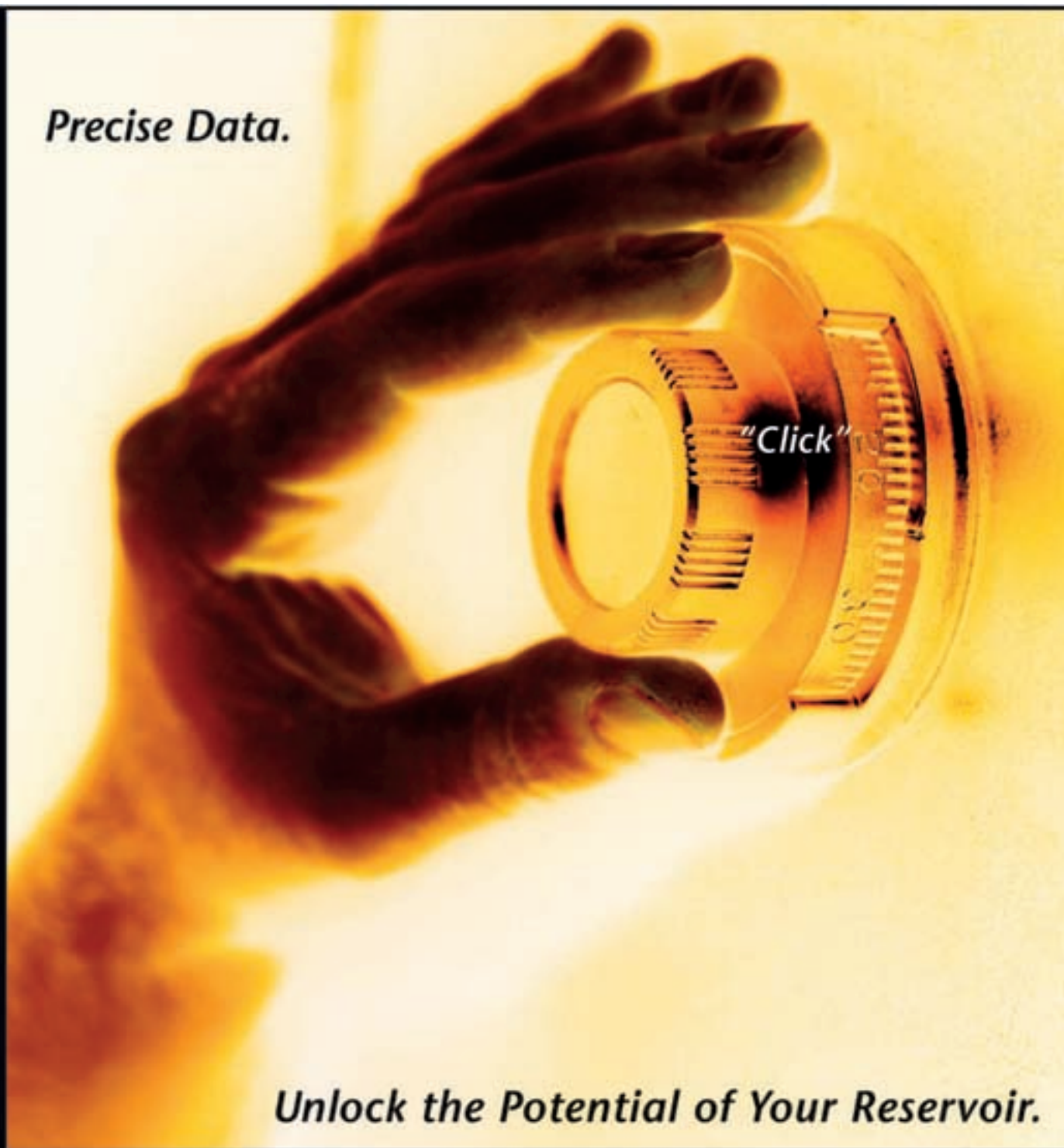
- ✓ The potential impact of the oil industry's looming demographic crisis.
- ✓ The role of the independent in west African exploration and production.

Keynote speakers will set the stage with talks ranging from mega-tectonics of Africa to exploration case studies circum Africa.

- ✓ Global climate change.

continued on next page

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continued from previous page

Why Non-African Geoscientists Should Attend Cape Town

Many geoscientists who work African exploration, development and production actually live elsewhere; this venue will provide an opportunity to meet and hear those who work locally.

A natural draw for those outside South Africa is the nearby outcrops of the Karoo (Permian) sandstones and Zerrissene turbidites of Namibia, which are world class analogs for deepwater slope and basin reservoirs.

These formations are the habitat of large hydrocarbon finds not only in west African countries of Nigeria, Angola and Equatorial Guinea, but also the Gulf of Mexico and other locations.

The opportunity to study these outcrops is even more rare since the recent closure of ranches in West Texas that contain the best outcrops of the Brushy Canyon Formation.

Some of the best papers from other technical meetings (DOWAC Luanda, best of SEG and SAGA) also will be featured.

The conference educational program, with planned short courses such as 3-D seismic and core workshops from deepwater reservoirs of South African Basins, will deliver teachings directly from experts to those seeking to enhance their knowledge in a broad range of petroleum geoscience topics.

Check out the meeting announcement on page 35 of this EXPLORER, and keep track of the latest news regarding Cape Town on the AAPG Web site at www.aapg.org. □

Summer NAPE A Big Success

Summer NAPE 2007, the property and prospect expo that has become one of the industry's top events, was once again "a resounding success," officials said, thanks to big numbers and big signs of activity.

The numbers for this year's event were:

- ✓ Registration – 6,064, a 17 percent increase over last year's event.
- ✓ Booth sales – 646, up 23 percent over last year.

The activity?

"Summer NAPE participants were well rewarded for their attendance," said Robin Forté, executive vice president of the American Association of Professional Landmen, which runs the event along with partners AAPG, IPAA and SEG.

"Stories of deals being sold and money being raised abounded," he said. "Summer NAPE makes people money ... That's why they come."

The event, held each August in Houston's George R. Brown Convention Center, provides a mid-year marketplace for the buying, selling and trading of oil and gas prospects and producing properties via exhibit booths.

In many ways, this year's Summer NAPE was a lot like last year's – but with more efficiency added to the mix.

"We were very pleased with our improved registration process," Forté said. "Virtually everyone received immediate service, as there were no lines. Those who had pre-registered were on their way in about 10 seconds if they used the bar code scanners; otherwise, badge pick up took less than a minute."

Summer NAPE 2008 will be held Aug. 27-28. □

Cape Town Gets a Fast Start

One of the more valuable dynamics of AAPG's Regions and Sections network is the potential to learn from other groups how their "best practices" can apply to your group.

So, what's the story on the Cape Town Organizing Committee?

Their lessons (so far):

✓ Start early – The core members of the CTOC (Cape Town Organization Committee) were called together during March 2006, nearly two-and-a-half years in advance of the meeting.

✓ Draw from diverse professionals

– The committee is a mix of oil and gas professionals in Cape Town, members of the Western Cape Branch of the GSSA (academics, government and some hard rockers) plus AAPG members from the rest of Africa, Europe, Asia, North America and South America.

For the committee's first meeting the invitation was cast as wide as possible to involve all interested role players from industry, government, service companies, academia and professional societies.

✓ Have co-chairs for each sub-committee – The concept of pairing

both a local and international person followed throughout the pre-planning. Each committee position is filled with two people – one local to South Africa, one international.

✓ Accomplish some goals quickly – In early 2007, 18 months in advance of the meeting, a two-day CTOC session attended by 20 participants accomplished important conference organizational tasks, including deciding on a conference theme and logo; creating a fully populated organizational structure; setting concrete plans for exciting field trips and short courses. □

How Can Petroleum Companies Make Better Decisions?



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PROFESSIONAL NEWS BRIEFS

Patty Abney, to geologic manager, Hallwood Petroleum, Dallas. Previously geologist, Hallwood Petroleum, Dallas.

Allyson K. Anderson, to professional staff, Committee on Energy and Natural Resources, U.S. Senate, Washington, D.C. Previously senior geoscientist, ExxonMobil Exploration, Houston.

Jason J. Beall, to senior geophysicist, Apache Canada, Calgary, Canada. Previously senior geophysicist, Apache North Sea, Aberdeen, Scotland.

James Blackwell, to president, Chevron Asia Pacific E&P, San Ramon, Calif., effective Jan. 1. Currently managing director-Southern Africa, Chevron,

San Ramon, Calif.

Kevin C.A. Burke this month will receive the 2007 Geological Society of America Penrose Medal, which recognizes outstanding contributions or achievements to the advancement of science in geology. Burke is professor of geology at the University of Houston.

Robert Neil Cook, to geoscience manager-Alaska, Pioneer Natural Resources, Anchorage, Alaska. Previously exploration manager-West Africa, Pioneer Natural Resources, Irving, Texas.

Alan Hadfield, to senior staff operations geologist, Murphy E&P, Houston. Previously senior operations geologist,

Hydro Gulf of Mexico, Houston.

Guy Hollingsworth, to president, Chevron Eurasia-Europe and Middle East E&P, London, England, effective Jan. 1. Currently managing director, Chevron Eurasia, London, England.

V. Joseph King, to managing director/principal consultant, Kronus Geological Services, Port of Spain, Trinidad and Tobago. Previously senior geologist (operations), BG Trinidad and Tobago Ltd., Diego Martin, Trinidad and Tobago.

Timothy C. Maxwell, to manager-geology and geophysics, northern North Sea, Canadian Natural Resources

International, Aberdeen, Scotland. Previously exploration manager-central Alberta district, Canadian Natural Resources, Calgary, Canada.

Thomas S. Meyer, to staff geologist, Questar Market Resources, Denver. Previously senior geologist and six sigma black belt, Dominion Exploration, Calgary, Canada.

Louis Rothenberg, to vice president, information systems, Black Gold Energy, Jakarta, Indonesia. Previously technical systems manager, Santos Ltd., Adelaide, Australia.

Tim Rynott, to senior geologist, Red Willow Production, Ignacia, Colo. Previously senior geologist, Forest Oil, Denver.

Scott E. Thornton, to regional geoscientist, Roc Oil Co., Sydney, Australia. Previously consultant-Brazil and Angola, Devon Energy, Houston.

George W. Troutman, to vice president geoscience, Golden Energy, Denver. Previously senior geologist, Forest Oil, Denver.

William D. "Bill" Underwood, to Chesapeake Energy Chair of Geosciences, Oklahoma School of Science and Mathematics, Oklahoma City. Previously manager-professional development, Society of Exploration Geophysicists, Tulsa.

Mark Webster, to gas exploration manager, Genesis Energy, Wellington, New Zealand. Previously exploration manager, TAG Oil, Wellington, New Zealand. □

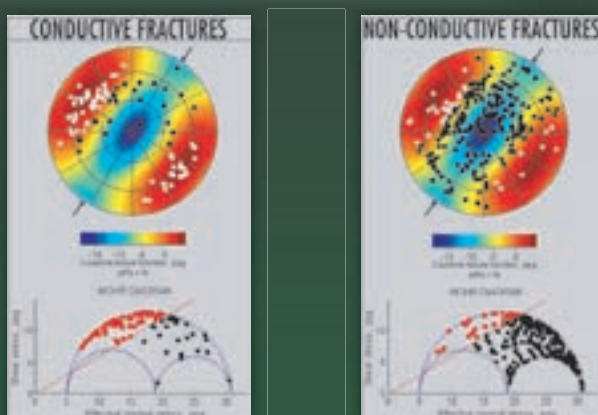
(Editor's note: "Professional News Briefs" includes items about members' career moves and the honors they receive. To be included, please send information in the above format to Professional News Briefs, c/o AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101; or fax, 918-560-2636; or e-mail, smoore@aapg.org; or submit directly from the AAPG Web site, www.aapg.org/explorer/pnb_forms.cfm.)

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Johnson Takes Helm for SIPES

AAPG member George S. Johnson has been installed as president of the Society of Independent Professional Earth Scientists for the 2007-08 term.

Johnson, president of Sunshine Exploration Co. in Amarillo, Texas, will be joined by several other AAPG members on the SIPES executive team, including:

- ✓ H. Jack Naumann Jr., Midland, Texas, vice president.
- ✓ Clifford A. Walker, Dallas, secretary.
- ✓ Lee M. Petersen, Fort Worth, treasurer.

AAPG members who will serve on the SIPES board of directors are:

- ✓ Owen R. Hopkins, Corpus Christi, Texas.
- ✓ Marc D. Maddox, Midland, Texas.
- ✓ J. Phil Martin Jr., Houston.
- ✓ Jon B. Shelby, Austin, Texas.
- ✓ Kenneth J. Huffman, New Orleans.
- ✓ Peter MacKenzie, Worthington, Ohio. □

WWW.UPDATE

Spam-a-lot! Web Site Fights Back

By JANET BRISTER
AAPG Web Site Editor

It seems like just about the time you get a handle on the latest computer hack or code update, someone rocks the boat!

In order to steady the boat here at AAPG headquarters, we've added an additional step to every electronic HTML form submitted from aapg.org. This little step asks you, the submitter of information, to type into a box what they see in the highlighted box just above the box into which they are typing.

What?

Just before you click the "submit" button you will be asked to type six characters that are visible in a red-outlined yellow-filled box. Those letters and/or numbers have been randomly generated – and without them your information will remain unsent.

When you type those same numbers you are helping us create a "roadblock" on our Web site – you're helping us protect aapg.org from viruses and spam.

Why?

There are people out in cyberspace who like to create little programs that send spam and viruses to the innocent.

Nothing new, right?

They target different domains and poke around wherever they can to find some little hole that wasn't plugged.

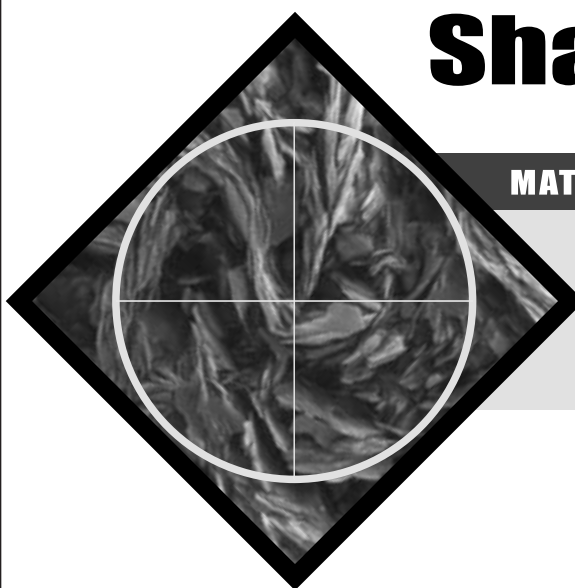
However, our ever-vigil IT department found them attempting to invade aapg.org through these forms.

AAPG's solution is this little gadget that basically throws up the roadblock to any one who is trying to automate this invasion process.

Bottom line ...

We appreciate you taking the time to complete the little requested string of characters in order to help us keep viruses, spam and other vermin out of our offices here.

Good browsing! ☐



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INMEMORY

- Joseph Searles Bowman, 86
Denver, May 14, 2007
- William J. Cox, 83
Houston, August 6, 2007
- Robert Lee Glossop, 83
Midland, Texas, July 12, 2007
- M. Herbert Keener, 84
Chorleywood, England
June 26, 2007
- William C. MacQuown, 91
Lexington, Ky., July 24, 2007
- Bill Reed Nicholson, 83
Abilene, Texas, May 17, 2007
- Harold Leslie Reade Jr., 82
Fort Collins, Colo., May 11, 2007
- Wilbur Lowell Shackelford (EM '51)
Roswell, N.M.
- Bevian C. St. Martin Jr., 84
Austin, Texas, June 11, 2007
- Paul Bentley Welch (AC '77)
Richardson, Texas

(Editor's note: "In Memory" listings are based on information received from the AAPG membership department. Age at time of death, when known, is listed. When the member's date of death is unavailable, the person's membership classification and anniversary date are listed.)

Attention Deepwater Explorers

Global Turbidite Field & Reservoir Database

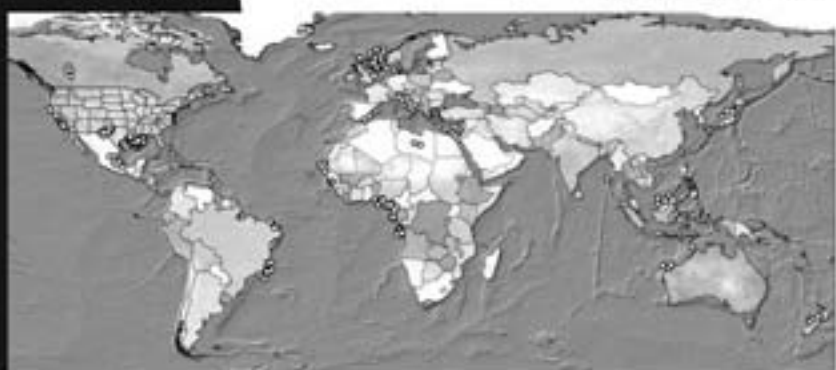
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MEMBERSHIP AND CERTIFICATION

The following candidates have submitted applications for membership in the Association and, below, certification by the Division of Professional Affairs. This does not constitute election nor certification, but places the names before the membership at large.

Any information bearing on the qualifications of these candidates should be sent promptly to the Executive Committee, P.O. Box 979, Tulsa, Okla. 74101.

(Names of sponsors are placed in parentheses. Reinstatements indicated do not require sponsors.)

Membership applications are available at www.aapg.org, or by contacting headquarters in Tulsa.

For Active Membership

Arkansas

Reddick, Brian Glover, self-employed, Little Rock (N. Waechter, R. Bailey, J.R. Watson)

California

Qi, Lianshuang, Chevron, San Ramon (T.R. Carr, R.H. Goldstein, J.R. Gilbert Jr.)

Colorado

Nettik, Jacinda, Delta Petroleum, Denver (G. Casteel, K.R. Allison, F.S. Walters)

Kansas

Poyer, Cina T., Kansas Department of Health and Environment, Topeka (reinstatement)

Oklahoma

Johnson, Troy Anthony, Samson Resources, Tulsa (R.R. Foshee, K.J. Lant, K.G. Morris); Rogers, Suzanne M., Sandstone Energy Acquisitions, Oklahoma City (T.L. Rowland, J.R. Howell, M.W. Smith); Wiggers, Chris C., Devon Energy, Oklahoma City (D.A. Fritz, W.J. Lamle, W.S. Coffey)

Texas

Hawthorne, Hal W., Jones Energy, Austin (J.R. Jones Jr., C.G. Goss, R.D. Shipley); Hawthorne, Todd Shelby, Jones Energy, Austin (C.G. Goss, J.L. McGrew, C.M. Williams); McConnell, Daniel R., AOA Geophysics, Houston (K.H. Peace, C. Shipp, D. Orange); Samuelson, Stanley Fairis, Trinity Storage Services, Houston (G.B. Asquith, D.A. Krygowski, C. Cooper); Soto-Agudelo, Luis Enrique, BP, Katy (D.R. Spain, A.S. McClain, R.B. Lieber); Van Deventer, Gilbert Jean, Trident Environmental, Midland (H. Smith, S.P. Tischer, M. Weathers)

West Virginia

Wehrle, Donny Ray, Energy Corporation of America, Charleston (P.A. Sullivan, R.K. Schamp, E.M. Rothman)

Australia

Leamon, Gregory Robert, Geoscience Australia, Canberra (reinstatement)

Canada

Hofmeister, Les Wayne, Schlumberger, Calgary (E. Gomez, L. Snethun, W. Clark); Lavoie, Jean-Yves, Junex, Quebec City (J.

Marcil, C. Morin, D. Lavoie); LeBlanc, Aaron R., Devon Canada, Calgary (T.W. Van De Reep, M.H. Portugal, K.W. Walko)

Colombia

Velasquez, Blas Enrique, Occidental Oil and Gas Corporation, Bogota (reinstatement)

England

Clegg, Phillip, Geopressure Technology, Durham (R. Swarbrick, R.W. Lahann, D.T. Scott); Smyth, Sean D., BG Group, Reading (J.K. Alderton, N.A. Lee, P.P. Roberson)

France

Simantov, Joseph, N.A., Veigy-Foncenex (Y. Bassias, D. Massaras, V. Simantov)

Ghana

Aryeetey, Michael Nii Armah, Ghana National Petroleum Corp., Tema (J. Agbenorto, A. MacLean, I.A. Botchway)

Indonesia

Lee, Sun Hyun, CNOOC SES, Jakarta (X.L. Ye, S. Weifeng, W. Peikang)

Iraq

Hassan al-Mufti, Torhan M., North Oil Co., Kirkuk (C. Caughey, S. Perkins, G. Zaeff)

Nigeria

Amgbare, Edwin Braye, Nigerian AGIP Exploration, Port Harcourt (B. Olaleye, A.A. Carim, D.A. Orubiri-Bokolo); Bubuy, Yikareboghha Yibudongha, NPDC, Benin (G.E. Ajah, M. Agbuza, A.E. Enemuoh); Udoh, Joseph Mfon, Shell Petroleum Development of Nigeria, Warri (O.A. Ehinola, A.J. Onyekweli, G.I. Akpan)

Norway

Rahman, Mohammad Najibur, Svenska Petroleum Exploration AS, Oslo (S. Johansen, J.P. Nystuen, L. Wagner)

Pakistan

Jamil, Muhammad Athar, Tullow Oil, Islamabad (A. Waheed, A. Nadeem, W. Abdul)

Portugal

Carvalho, Joao Paulo Gameira, Inst. Nac. Eng. Tecn. INOV., Amadora (H.C. Matias, R. Baptista, D. Herold)

Scotland

Grando, Gianluca, Midland Valley Exploration, Glasgow (S.C. Williams-Stroud, W. Sassi, K.R. McClay) □

Certification

The following is a candidate for certification by the Division of Professional Affairs.

Petroleum Geologist

Colorado

Houston, William S., Samson Resources, Denver (R.R. Gries, S.A. Sonnenberg, J.E. Harris)

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Barnett 'Hits' Don't Rule Out Misses

Still a 'Statistical Play'

(Editor's note: Thomas Bowman will present the paper "Increasing the Odds: Data Analysis of the Barnett Shale in the Fort Worth Basin," on Oct. 8 at the Rocky Mountain Section's annual meeting in Songbird, Utah.

Bowman's talk is the lead paper in the session on "Resource Play Technologies." His co-authors are Eric Nelson and Dwight Roberts. All are with Aspect Abundant Shale LP, in Denver.)

By LOUISE S. DURHAM
EXPLORER Correspondent

Low risk, high reward.

How better to describe the Barnett shale gas play in the Fort Worth Basin?

"The risk is low because there's little doubt that gas exists in enormous volumes in the Barnett Shale source rock," said Thomas Bowman, exploration manager at Aspect Abundant Shale LP. "It's estimated as much as 150 BCF per square mile at depths between 7,000 and 8,500 feet.

"The reward is great because fracture stimulation technologies and, recently, horizontal drilling have already yielded more than 2.6 TCF of gas and 8.46 million barrels of hydrocarbon liquids from the Barnett Shale," Bowman added.

That's the good news.

The bad news is there's been a goodly number of failed wells in this play.

"This is a statistical play," Bowman remarked. "We gave up conventional prospect risk to take on a different type of risk, that being more so the drilling and completion practices risk.

"If you do everything right – well placement, lateral length, keep drilling costs down, get casing centralized and even get a good completion – you still may not have a good well."

Variables to Consider

The list of variables that must be addressed when working the Barnett is lengthy and includes:

- ✓ Location.
- ✓ Depth.
- ✓ Thickness.
- ✓ Well placement.
- ✓ Where to land the lateral – and how long to make it.
- ✓ How to complete.
- ✓ How many stages of frac, how large and what type of frac.

Clearly, before tackling this complex rock, you must do some serious homework – which is helped along with a bit more cooperation among the operators than is customary in the oil patch.

"There are so many people doing so many different things," Bowman said, "and we have the ability to analyze everyone's work. The industry has been willing to share information, and in addition to so much information sharing, there's so much information made available publicly

(through the Texas Railroad Commission)."

Aspect believes strongly in the approach of analyzing as much data as possible. It's noteworthy they do not use their own wells for analysis, with the belief that a company must have drilled and operated at least 20 wells – Bowman noted the company is almost there – for the operators to be considered experienced.

In other words, success in the play takes time, and the learning curve is steep.

Magic Number(s)

Via its analysis of lateral lengths drilled, Aspect has determined that wells in the play reach optimum recovery at or near 3,500 feet.

"We break it down to Mcf per foot of lateral length," Bowman said. "When you go beyond 3,500 feet, that incremental addition of the foot and the Mcf per foot decreases because of several factors.

"Drilling a 3,500-plus lateral length becomes more difficult than just drilling," he said. "You're in the hole for more days, and the longer the open part of the Barnett is exposed to drilling fluids, the higher the risk of not getting the lateral out to projected TD.

"When you decide to keep the hole clean and flush solids out, you have to set casing through that," Bowman continued. "You've now had a hole exposed to the elements, which becomes difficult in that you won't get pipe to the bottom.

"Now you have spent drilling dollars beyond some distance you'll never get a chance to complete."

Another chunk comes out of the budget if, say, there's a 4,500-foot lateral requiring an eight-stage frac job versus a six-stage implementation. Another downside here is the well may not be able to flow the water back soon enough, decreasing reserves.

In the basin overall, longer laterals are accompanied by decreased success rates and a decrease in EUR, according to Bowman.

He noted Aspect considers a median horizontal length in the play to be about 2,700 feet with a median EUR about 1.7 Bcf.

Word to the Wise

If you're new to the Barnett action or considering an entry point, Bowman has some cautionary words.

"Every time we think we know something concrete about this play, it changes," he said. "When you take the play to other areas such as the West Texas Barnett, it's a good starting point, but each of these areas has nuances that significantly impact economics.

"We've been pushing the play south toward Waco where we've drilled a well in the southern part of Hill County, and the rock is completely different," Bowman said. "It's not the Fort Worth Barnett." □

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"Structure and Stratigraphy of the Permian Basin: Understanding the Fundamentals of Conventional and Unconventional Plays"

The Fall Symposium continues a long-standing tradition of excellence with a strong technical program targeting concepts applied to active exploration and development of plays in the Permian Basin. The two days of technical sessions feature both oral and poster sessions presented by noted authors on the diverse aspects of Permian Basin plays. Friday morning will feature a core workshop. Anticipated cores to be included in the workshop will be: Wolfcamp, presented by Henry Petroleum; Clear Fork Detrital, presented by Whiting Petroleum; and Suntura Field, presented by Great Western Drilling. The symposium offers an opportunity for geologists, geophysicists, and engineers to meet with the researchers and service providers operating in the Permian Basin and dedicated to continual learning for resource development.

Technical Sessions:

- Well Log and Core Analysis of Permian Basin Reservoirs
- Structure and Stratigraphy of the Permian Basin Oil Giants
- Barnett Shale in SE New Mexico and West Texas
- New Technologies for Conventional Plays
- Outcrop Analogs for Permian Basin Reservoirs
- Reserves of the Permian Basin

The Fall Symposium will be held at the Midland Center in downtown Midland, Texas, with technical sessions and poster sessions taking place on **October 24 – 26, 2007**. The symposium will begin at 8:30 am on Wednesday October 24 with registration beginning at 7:30 am. In conjunction with an upcoming University Oil & Gas Lease Sale, there will be an Open House at the University Lands office, 704 W. Dengar, on Tuesday evening and an invitation has been extended to anyone attending the symposium. For more information, contact Executive Director Paula Mitchell at the WTGS office at (432) 683-1573, wtdgs@basinlink.com or General Chairman David Grace (432) 694-3000, david@henrypetroleum.com. For information on technical sessions, contact Stonnie Pollock at stonniep@forl.com (432) 687-1777. An Ethics Luncheon Presentation will take place on Wednesday at the Midland Petroleum Club. The presentation will be given by Jim Henry of Henry Petroleum. This presentation meets the Texas Registration requirement for Professional Development Hours for Geologists and Engineers.

To register, please send the completed form below with payment to: WTGS P.O. Box 1595, Midland, Texas 79702. Credit card payment may be faxed to (432) 686-7827. **Pre-registration and cancellation deadline is October 9, 2007.** A block of rooms has been reserved at the Midland Hilton. The hotel phone number is (432) 683-6131. Remember to ask for the special WTGS symposium rate.

____ Symposium Pre-Registration \$125.00 ____ Symposium On Site Registration \$150.00
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I cannot attend but wish to order _____ copy/copies of the symposium CD. The cost is \$30.00 per set plus \$7.40 tax, shipping and handling. This price is good until October 26, 2007.

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* Attendance is limited to 250 with symposium registrants given first priority. Remaining slots will be filled on a "first come, first served" basis.

The WTGS Annual Golf Tournament will begin at 1:00 pm on Friday, October 26 following the close of the Fall Symposium. Please call for more information or visit the WTGS website.

Rocky Mountain Meeting Set Oct. 6-9

"Exploration, Discovery, Success" is the theme for this year's Rocky Mountain Section annual meeting – a "Rocky Mountain Rendezvous" – set Oct. 6-9 at Snowbird, Utah.

The program offers an exhibits hall and technical program featuring the best in Rocky Mountain science,

technology and recent exploration developments.

Registration, the complete technical program and other meeting details – including social activities – are available online at <http://www.utahgeology.org/rms-aapg.htm>



MULTIPLE HIRES IN ENERGY—SCIENCE, ENVIRONMENT, AND POLICY RESEARCH

The Jackson School is building a premier education and research program in Energy—Science, Environment and Policy Research. We seek scientists at the forefront of their disciplines attracted to challenging areas of scholarship that require collaboration across disciplines and programs. We seek to address compelling questions within the broad theme of determining how we can create an energy future that is sustainable and environmentally and economically robust. These questions include, but are not limited to:

- How can we integrate classically separated disciplines (geomechanics, geochemistry, tectonics, stratigraphy, petrophysics, geophysical imaging, regional/basin scale studies) to advance interrelationships at the forefront of energy and environmental science?
- How do fluid-rock interactions and the interplay between mechanical and chemical processes influence fluid flow and storage in the subsurface?
- How can we improve identification and recovery of energy resources by comprehensive integration of information at all scales, integrated numerical modeling, and innovative automated and continuous monitoring?
- Can we solve the compelling environmental issues associated with the extraction and use of fossil fuel energy sources, including water and land use, and carbon sequestration?
- Can we develop energy policies founded on solid scientific and engineering information and innovative approaches that will simultaneously promote environmental stewardship and energy security?

Over the next three years we will hire six or more faculty and scientists who complement our existing strengths. We are interested in a wide variety of research areas ranging from rock/fluid systems, subsurface sensing, tectono-stratigraphy, carbon management, energy economics and policy, basin-scale analysis and modeling, and resource and reserve geoinformatics. We also encourage applications from innovative scientists in other areas related to energy—science, environment and policy.

Opportunities exist at any level, and can be within or in combination with any Jackson School Unit—the Department of Geological Sciences, the Bureau of Economic Geology, or the Institute for Geophysics. The schedule of appointment is also negotiable.



MULTIPLE HIRES IN EARTH SURFACE AND HYDROLOGIC PROCESSES

The Jackson School is building a premier education and research program in Earth Surface and Hydrologic Processes. We seek outstanding scientists at the forefront of their disciplines who are attracted to challenging areas of scholarship that require collaboration across disciplines and programs. We seek to address compelling questions in surface and hydrologic processes within the broad theme of determining how surface and hydrologic processes are influenced by their dynamic setting at the interface of the lithosphere, atmosphere, hydrosphere, and biosphere. These questions include:

- How do climate, ice sheets, and tectonics interact to define the distribution and character of sea level change?
- How do coastal zone geology, biology, biogeochemistry, and hydrology respond to surficial processes, particularly to sea level change?
- What are the impacts of climate variability/change and land use change on water, nutrient, and sediment cycles?
- What is the integrated result of the interplay between tectonic deformation, climate change, and biota on the Earth's surface and on the supply, distribution, and storage of sediments?
- What are the physical, chemical, ecological processes and social forces that will determine the sustainability of our water resources?

Over the next three years, we will hire six or more faculty and scientists who complement our existing strengths. We are interested in a range of research areas from quantitative geomorphology to hydrologic-biologic interactions to societal impacts and resource sustainability, and capabilities ranging from modeling landscape dynamics to remote sensing, shallow environmental geophysics, aerogeophysics, and monitoring groundwater and coastal systems. We also encourage innovative scientists in other areas related to surface and hydrologic processes to apply. Opportunities exist at any level and within any Jackson School Unit—the Department of Geological Sciences, the Bureau of Economic Geology, or the Institute for Geophysics. The schedule of appointment is also negotiable.

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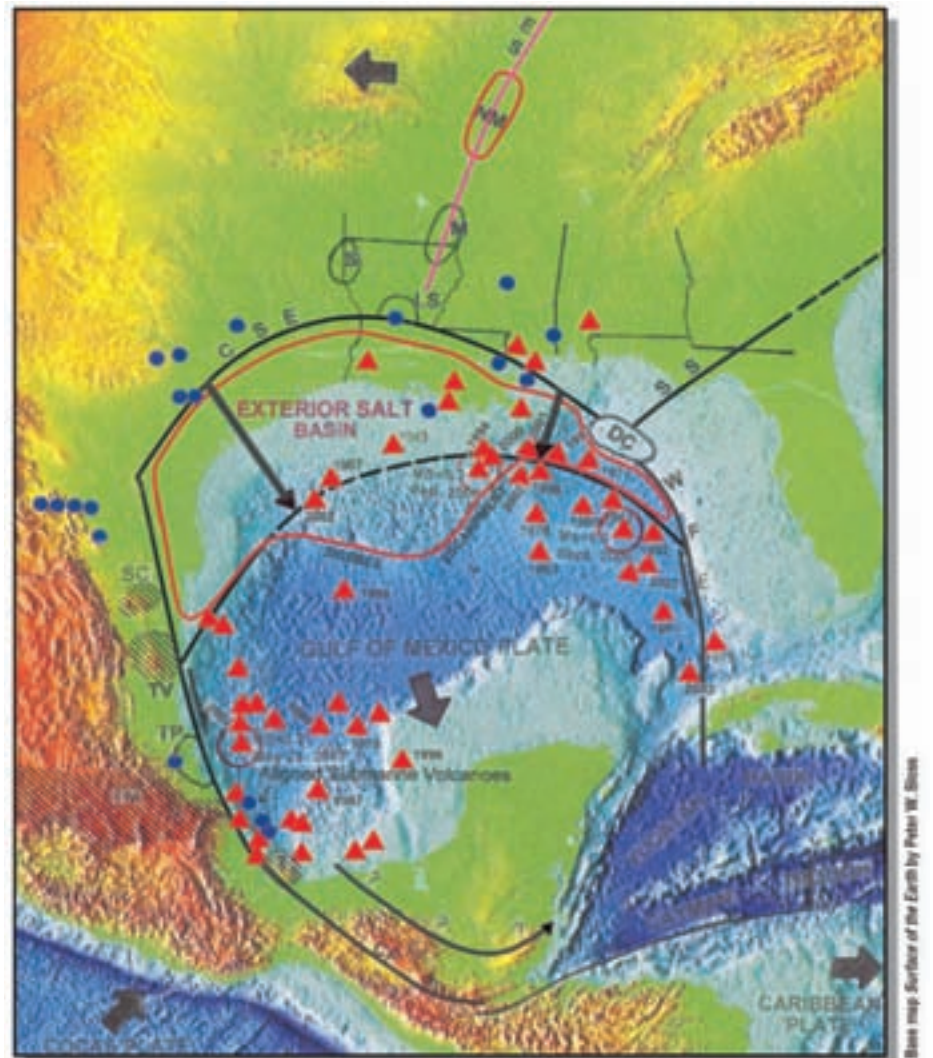


Figure 1



Commentary

Thoughts on GoM Plate Movement

(Editor's note: AAPG member Jack Reed, a retired Texaco geologist/geophysicist, has been the source for several EXPLORER articles on tectonic plate movements taking place in the Gulf of Mexico. His years of study and research delineated a triple juncture located in the Gulf, its various components and described mid-oceanic spreading that resulted in the formation of the Exterior Salt Basin.

One paper demonstrated that Sigsbee Knoll salt extends across the deepwater Gulf and connects with the Exterior Salt basin salt; others were generated for earthquake trends to support these tectonic movements.

Here is his latest look at supporting tectonics in eastern Mexico for GoM plate movement.)

By JACK M. REED

One of the aids used in locating the position of the right lateral transform fault (RLTF) was provided by the world map "Surface of the Earth" generated by Peter W. Sloss (see figure 4, page 55). This map has a weak topographic high crossing southern Louisiana and Texas. This high is the surface expression of the Cretaceous Shelf Edge as it extends across the south. However, in southwestern Texas this ridge makes a 125-degree southward turn (arrows).

When the RLTF was placed along this south trending high, the answer to several Mexican East Coast geological problems

were satisfied (figure 2).

✓ In northeastern Mexico, Cretaceous and older are present west of the northern RLTF; east of this line, however, the Tertiary section expands tremendously and the older Mesozoic is missing.

✓ The San Carlos and Tamaulipas volcanic fields are aligned perfectly with this RLTF trend.

✓ The Lower Cretaceous Tuxpan Platform is located along the western edge of the RLTF. This location places it on the high side of the transform fault and in a perfect position for the growth of the Golden Lane reef trend.

✓ This right lateral transform fault easily answers the question of why the Tulas volcanic field is offset southward from the Trans-Mexican Volcanic Belt. Along this transform line separation of the Trans-Mexican Volcanic Belt and the Tulas volcanic field occurred. Tulas was moved south leaving a trail of three submarine volcanoes along the separation line.

✓ The southern movement of the GoM plate along the RLTF could be the cause of the northeast-southwest trend to the Mexican Ridges deformation belt.

Earthquake Activity

With active tectonic plate movement there will be accompanying earthquake activity. As the GoM plate moves in a southeasterly direction dozens of recently

continued on next page

Márquez-Azúa and DeMets: Current deformation of Mexico from GPS

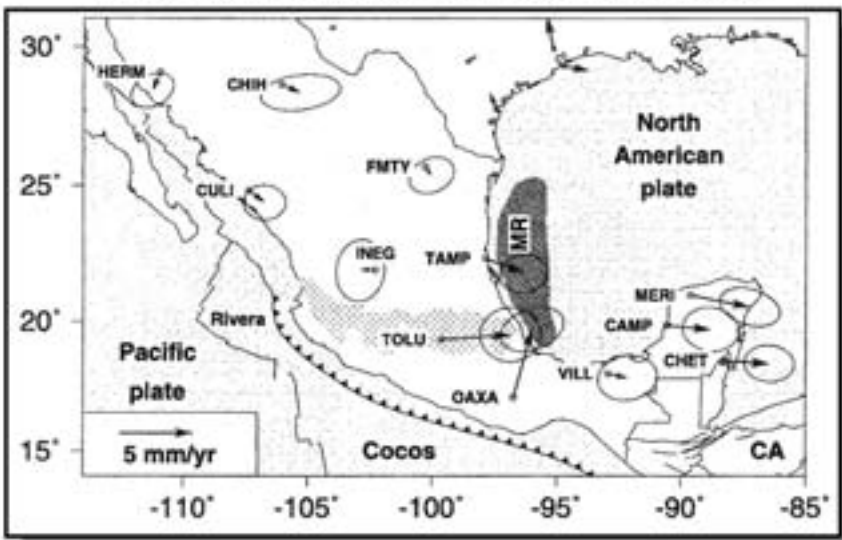


Figure 2

continued from previous page

recorded earthquakes have been detected by this action (figure 2).

For this study only the quakes that were recorded in the water portion of the GoM are presented. (Earthquakes located in the southern part of the Bay of Campeche were not included in this count.)

Thirty-six quakes were generated within the Gulf's open waters and all are confined to the area of the GoM plate. Most of these earthquakes are located on or near the trailing edge of the moving plate. Several outline the transform faults; the rest are scattered over the surface of the GoM plate.

Most of these earthquakes are small in

strength (MS=3 to 4).

In 2006, however, there were two that struck along the eastern edge of the trailing edge of the GoM plate, registering MS=5.2 and MS=6.0 (red circles). The MS=6.0 caused slight damage along Florida's west coast.

On May 23, 2007, a third strong quake hit (MS=5.2) 80 miles off the coast of Tampico (red circle).

There is definitely tectonic activity acting along this moving GoM plate. This study simply points to the fact that there will be more earthquakes occurring along this plate and some will be quite large – they could be in the MS=5 range to a possible MS=6.5.

See **Reed**, page 55

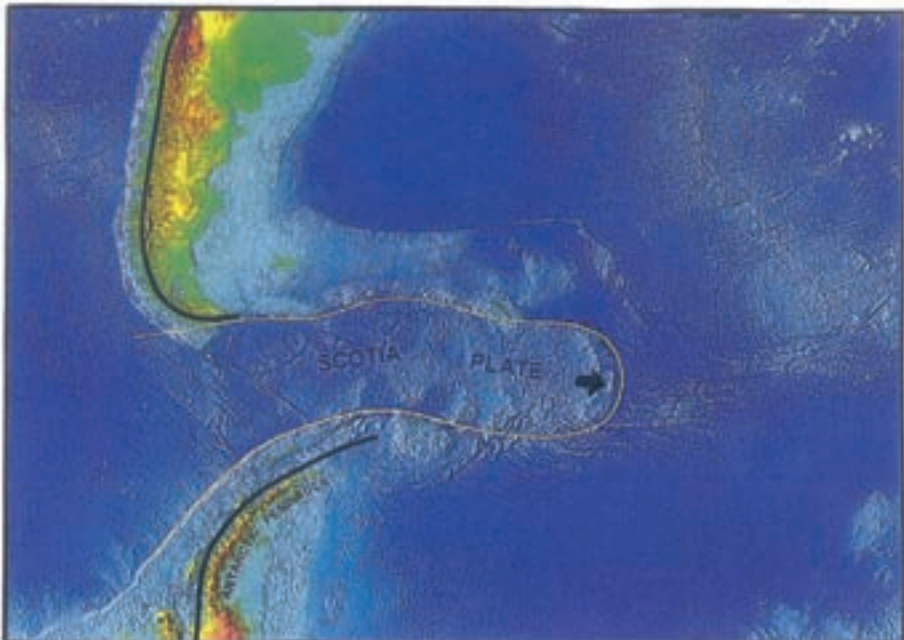
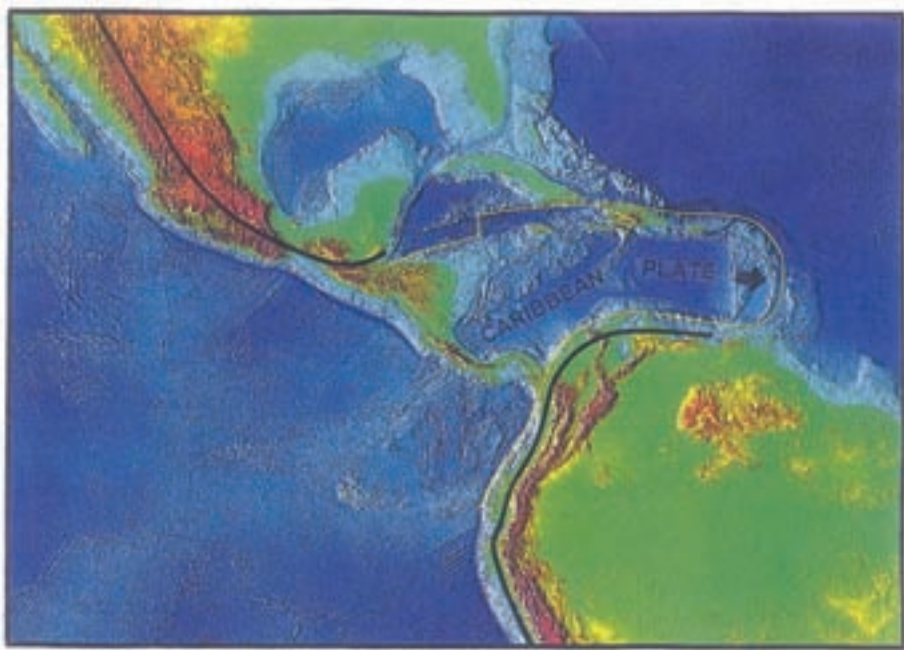
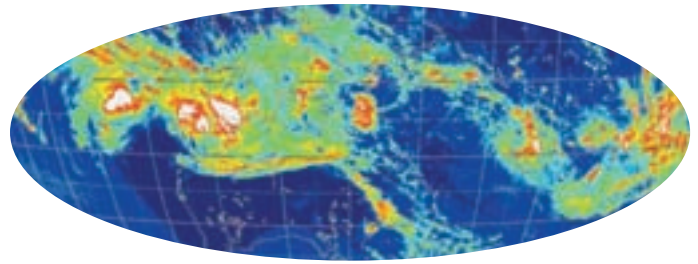


Figure 3



MULTIPLE HIRES IN CLIMATE SYSTEMS SCIENCE

The Jackson School is building a premier education and research program in Climate System Science. We seek scientists at the forefront of their disciplines attracted to challenging areas of scholarship that require collaboration across disciplines and programs. We seek the expertise required to address fundamental questions associated with a changing Earth system, including:

- What processes control the rates of change and variability of the climate system, including the atmosphere, ocean, cryosphere, land surface, and biosphere?
- Can we improve our ability to anticipate these changes and determine the potential impacts on society?

Over the next three years, we will hire six or more faculty and scientists who complement our growing strengths. We will hire individuals who will enable us to build a comprehensive climate program and who will make fundamental advances in our understanding of the climate system. These areas include, but are not limited to:

- Improved modeling of the Earth system, specifically including ice sheets, the global carbon cycle, and interaction between the components of the Earth system
- Enhanced observation of the Earth system, including remote sensing of Earth-surface processes and components
- Greater capability to utilize geologic archives to understand climate change, including paleoclimatology, paleoceanography, and paleobiology
- Improved ability to link climate and hydrology, particularly at the basin-to-continent scale
- Increased strengths in atmospheric dynamics and physical oceanography
- Increased ability to understand variability and quantify uncertainties, including statistical climatology
- Greater capability to address societal impacts and vulnerability, including adaptation and mitigation

We encourage applications from innovative scientists in other areas that are related to climate system science. Opportunities exist at any level, can include cluster hires, and can be within or in combination with any Jackson School Unit—the Department of Geological Sciences, the Bureau of Economic Geology, or the Institute for Geophysics. The schedule of appointment is also negotiable.



NEW HIRES IN GEOSCIENCE EDUCATION

The Jackson School of Geosciences seeks individuals attracted to the challenge of geoscience education at the university level. As leaders in geoscience pedagogy, candidates should excel as teachers and developers of courses set in field, laboratory, and lecture environments. The new hires may also contribute to the Jackson School's commitment to educate the wider community of the public and K-12 pre-college students.

We encourage applications from those with proven records of teaching and related experience at the college level. Candidates are expected to hold a PhD degree in the geosciences or a closely related field. Additional credentials may include experience in securing external funding, and a record of publications related to geoscience education.

Opportunities exist for appointments as Lecturer, Senior Lecturer, Adjunct Faculty, or tenure-track Faculty, depending upon credentials and interests. Appointments will be primarily within the Department of Geological Sciences, but may include affiliations with the Jackson School's main research units, the Bureau of Economic Geology or the Institute for Geophysics. The schedule of appointment is negotiable.

Ph.D. is minimum requirement for application. Send inquiries and applications (cover letter, CV, list of publications, list of references, statements of teaching and/or research interests) to: Randal Okumura, Office of the Dean / Jackson School of Geosciences, The University of Texas at Austin / PO Box B, University Station / Austin, TX 78713 or jobs@jsg.utexas.edu.

For more information on the school and its hiring program visit us online at www.jsg.utexas.edu/hiring.

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READERS' FORUM

Editor's note: Letters to the editor should include your name and address and should be mailed to Readers' Forum, c/o AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101, or fax (918) 560-2636; or e-mail to forum@aapg.org. Letters may be edited or held due to space restrictions.

The Future's Not So Bad

Regarding the letter "Training" in the August Readers' Forum: The Forum always has been a highlight for me over the years – it actually provides an historical oversight of the changing nature of our profession.

I have been working for 52 years, from being a junior geologist with Stanolind (Amoco) to high levels of responsibility. I have friends who don't even own or work with computers, who are mostly now retired, and who have said, "Things aren't like they used to be."

Well, they are right – and they are also very wrong about the state of our profession.

I've worked with young geologists all my life and have been closely associated with the highly successful Student Expos (Job Fairs) for the past 10 years. For the "old timers" who put down the current knowledge and approach of the new breed of geoscientists of today, I'm here to tell you that you have no idea just how sharp and talented many of them are.

(They have to be – you can't just go out and find oil and gas by drilling "updip" from a show, anymore.)

So, if you want to debate this issue at all, I'm the first to tell you – you name the place and time, and I'll be there to show you how much talent we are developing in our business.

And also what it really takes these days to find your next discovery.

Charles R. "Chuck" Noll
Houston

Search & Discovery

There is no question – *Search & Discovery* is a great source of current reference information.

In consulting projects, it gives me a rapid, easy-to-use source of critical information along with the usual literature search tools at one's disposal. The variety of formats – from abstracts and extended papers to PowerPoint presentations and posters – is unprecedented.

AAPG's team of John Shelton, Ted Beaumont and Ron Hart deserve everyone's thanks for conceiving *Search & Discovery*. It makes my work easier.

George Devries Klein
Sugar Land, Texas

R-O-C-K in the USA

Lassie and laddy editors of "Readers' Forum:"

As I complete my 55th year of membership in AAPG I have received many questions from grandkids about "global warming." That one is easy. I quote the AAPG position.

My problem is handling the questions about AAPG – preferred "contemporary music." I state that is *probably* "hard rock."

When they ask, "Which performing group?" I answer *probably* the Rolling Stones.

continued on next page

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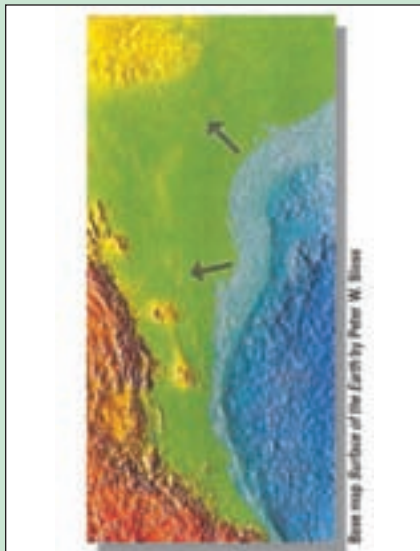


Figure 4

Reed

from page 53

Rotating GoM Plate

Every aspect of the GoM plate has the appearance of a freely rotating block moving in a counterclockwise direction.

With this plate located in the middle of opposing moving blocks, tectonic forces would be a major cause of this rotational movement as follows:

- ✓ On the northern boundary of the GoM plate the North American mass is moving west.
- ✓ The GoM plate itself is moving southeast.
- ✓ Jamming in from the west in a northeasterly direction is the Cocos plate.
- ✓ The Caribbean plate is moving east

with contact across the southern edge of the GoM plate.

Yucatan's Eastward Motion

Bertha Márquez-Azúa and Charles DeMets, in their 2003 article "Crustal Velocity Field of Mexico," state that all sites in the Yucatan Peninsula move toward the east at three-four mm/year, possibly defining an independent Yucatan block (figure 2).

Physiographic features of the mountain ranges support their statement. The RLTF joins the Chiapas fault near the Tuxlas volcanic field. From there this complex trends southeast to east and follows the prevailing mountain ranges of southern Mexico, Guatemala and Honduras. This would argue that the Yucatan portion of the plate is moving in an easterly direction.

Tectonic Forces

Figure 3 describes the forces exerted by even small tectonic plates. The Scotia Plate could be called the "armor piercing plate" the way it has crashed through what appears to have been a connection between the tip of South America and the Antarctic Peninsula.

On the northern tip of South America a similar situation exists, with the Caribbean Plate appearing to "crash" through Central America.

There would be more than enough force and energy generated by these movements to rotate the GoM Plate. □

(Reed can be contacted at jackreed5@cox.net.)

continued from previous page

My question to you is in anticipation of their next question, "Which song?" "Rock of Ages" comes to mind, but I don't imagine that a contemporary music version is yet available.

Is there one titled "Bad Day At Black Rock?"

Please ask your younger employees for help on this matter in the interest of "Math-Logic and Scientific method." Otherwise, I will be unable to hold attention to fossil hunting much longer.

Bill O. Andress
Tulsa

(Editor's note: We prefer Paul Simon's "Love Me Like a Rock." Incidentally, "Bad Day at Black Rock" was an acclaimed 1955 film starring Spencer Tracy, so at least you now have an answer ready for "Which movie?" And yes, outcrops definitely come into play.)

G-I-A Applications Available Online

Application forms for the 2008 AAPG Foundation Grants-in-Aid program are now available on the AAPG Web site, open to all geoscience graduate students who seek funding for their research project.

Grants are based on merit and, in part, on the financial needs of the applicant.

The monetary awards are up to a maximum amount of \$2,000. The grants are to be applied to expenses directly related to the student's thesis work, such as field work, laboratory analyses, etc.

The application deadline is Jan. 31. Forms are available at <http://foundation.aapg.org/gia/index.cfm>. □

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UNIVERSITY OF WYOMING

ENERGY-RELATED GEOPHYSICS - OPEN RANK

The Department of Geology and Geophysics at the University of Wyoming invites applications for a faculty position in the Department and in the newly created School of Energy Resources (SER) at the University of Wyoming, an institute dedicated to energy-related teaching and research in support of State, national, and international energy-related activities. This appointment may be made at any rank. The position can begin as soon as January 1, 2008.

We seek an individual who will establish a well-recognized, externally funded research program in geophysics, with a preference toward reflection seismology, petrophysics, or potential fields as applied to energy-related research. Applicants should complement and/or expand on departmental strengths in geophysics, structure geology and tectonics, sedimentology, and/or crustal studies. We seek a person with the ability to cooperate productively with other SER faculty in geology and geophysics, mathematics, chemical and petroleum engineering, economics, and other energy-related fields. The successful candidate will be involved in the undergraduate and graduate teaching mission of the Department of Geology and Geophysics. The SER is an ambitious, state-funded institute that seeks innovative researchers working on new approaches at the forefront of the expanding fields in energy research. Information about the School of Energy Resources is available at uwo.edu/SER. Additional information on the Department Geology and Geophysics can be obtained at <http://home.gg.uwo.edu/>.

Applications should include a statement of research and teaching interests and accomplishments, curriculum vitae, and the names and contact information for three individuals who can provide letters of evaluation. Review of completed applications will begin October 1, 2007; however, applications will be accepted until the position is filled. Send an electronic copy of your application to: Ms. Carol Pribyl at cpribyl@uwo.edu; if you have additional application materials to send, please direct them to the Geophysics Search Committee, Department of Geology and Geophysics, University of Wyoming, 1000 East University Avenue, Dept. 3006, Laramie, WY 82071-2000.

The University of Wyoming is an equal opportunity/affirmative action employer.



Professor/ Reader/ Senior Lecturer (Post ref: KB/4847)
Lecturer/Senior Lecturer (2 Posts) (Post ref: KB/0504)
Lecturer (Post ref: KB/4848)

Department of Geology

To support major international initiatives in Petroleum Geoscience, we seek to appoint up to four new academic staff to faculty positions at Professor/Reader, Senior Lecturer and/or Lecturer level. Areas of interest include carbonate sedimentology, clastic sedimentology, sequence stratigraphy, seismic interpretation, structural geology, remote sensing/GIS, reservoir engineering, and reservoir geophysics. Experience or research links with the hydrocarbon industry would be an advantage. One position will involve particular responsibility for the development and delivery of a distance learning programme. For details of the Geology Department see <http://www.gl.rhul.ac.uk> or contact the Head of Department, C. Mary R. Fowler. Posts will be available from January 2008. Applications for part-time hours and job shares will be considered.

Salaries: Professor from £51,741; Senior Lecturer/ Reader, £43,679 to £49,593; Lecturer, £34,930 to £41,881. All salaries are inclusive of the London Allowance.

Further details and an application form are available from the Personnel Department, Royal Holloway, University of London, Egham, Surrey TW20 0EX; tel: 01784-414241; fax: 01784-473527. Please quote the appropriate ref. <http://www.rhul.ac.uk/Personnel/JobVacancies.htm>

Closing date for the receipt of applications is 1st November 2007
Interviews are likely to be in the week starting 19th November 2007

We positively welcome applications from all sections of the community

CLASSIFIED ADS

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U.S. Geological Survey Mendenhall
Postdoctoral Research Fellowship Program

The U.S. Geological Survey (USGS) invites applications for the Mendenhall Postdoctoral Research Fellowship Program for Fiscal Year 2009. The Mendenhall Program provides opportunities to conduct research in association with selected members of the USGS professional staff. Through this Program the USGS will acquire current expertise in science to assist in implementation of the science strategy of its programs. Fiscal Year 2009 begins in October 2008.

Opportunities for research are available in a wide range of topics. The postdoctoral fellowships are 2-year appointments. The closing date for applications is November 9, 2007. Appointments will start October 2008 or later, depending on availability of funds. A description of the program, research opportunities, and the application process are available at <http://geology.usgs.gov/postdoc>. The U.S. Geological Survey is an equal opportunity employer.

U.S. Geological Survey (USGS)
Positions Available
Research Geologist

The USGS, Central Region Energy Resources Team, is soliciting interest from qualified individuals for two positions of Research Energy Geologists in Lakewood, Colorado. These positions will conduct fundamental geologic research to evaluate and characterize the geologic framework and occurrence of a variety of geologic energy resources, including conventional and unconventional oil and gas, coal, and uranium. The unconventional oil and gas applications may include oil shale, oil sands, basin-centered gas, shale gas, and coalbed methane. Candidates must be able to work as part of a multidisciplinary team of geologists, geochemists, geophysicists, and engineers. Excellent skills in writing and oral presentation of scientific findings are also required.

Applications (resume and application questions) for this vacancy must be received on-line via the USGS Online Automated Recruitment System (OARS) BEFORE midnight Eastern Time (Washington, D.C. time) on the closing date of this announcement. If you fail to submit a complete online resume, you will not be considered for this position. Requests for extensions will not be granted. If applying online poses a hardship for you, you must speak to someone in the Servicing

Vahrenkamp Added
To Speaker Lineup

The largest, most ambitious slate of Distinguished Lecturers in the program's history has gotten even bigger.

One more name has been added to this year's list of lecturers, bringing the total number of DL members to 15 – nine for domestic U.S. tours, and six for international tours.

Added to the list of international speakers is **Volker C. Vahrenkamp**, with PDO in Oman. He'll offer two talks:

✓ "Dealing With Multi-Level Property Heterogeneity in Carbonate Reservoirs."

✓ "Carbon Isotope Stratigraphy of Mid-Cretaceous Shallow Water Carbonates: Improved Chronostratigraphy and Other Implications."

AAPG's DL program, funded in part by the AAPG Foundation, was developed to expose students, young geologists, college faculty members and members of geological societies to current information, research and thinking.

This year's program offers speakers from both industry and academia, with topics that range from timely subjects like geologic-based evidence of climate change, to Canadian oil sands, to fractured reservoir characterization.

Four domestic DL speakers will be touring during October. They are:

□ **Jon Olson**, associate professor, department of petroleum and geosystems engineering, the University of Texas at Austin. His tour started in late September, and he offers two talks:

✓ "Fractured Reservoir Characterization: From Diagenesis and Fracture Mechanics to Reservoir

Permeability."

✓ "A Geologist's Guide to Explaining Natural Fracture Phenomena with Fracture Mechanics."

□ **Terry Engleder**, a professor at Pennsylvania State University, University Park, Pa. His tour of eastern North America will go from Oct. 8-19, and he'll offer two talks:

✓ "Craquelure in Masterpieces of the Louvre (Paris, France) as Analogue Models for Development of Joints in Fractured Reservoirs."

✓ "Acadian-Alleghanian Orogenesis as Revealed by Fracturing Within the Appalachian Foreland."

□ **Katherine Giles**, a professor at New Mexico State University, Las Cruces, N.M. Her tour of eastern North America runs Oct. 15-26, and she'll be offering two talks:

✓ "Tracking the Migration of Salt Diapirs Using Halokinetic Sequence Stratigraphy."

✓ "Complex Feed Back Loops Controlling Heterozoan Reef Development on Salt Diapirs, La Popa Basin, Mexico."

□ **Kirk Johnson**, vice president of research and collections, Denver Museum of Nature and Science, Denver. His tour of western North America runs Oct. 15-26.

His talk is titled "Crocodiles in Greenland and Hippos in London: A Fossil-Fueled Tour of Past and Future Climates."

For details on the talks, tours and DL program go to the AAPG Web site at www.aapg.org. □

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Personnel Office listed on this announcement PRIOR TO THE CLOSING DATE for assistance. Contact Jennifer Farrell at 303-236-9566 or jfarrell@usgs.gov.

The OARS system can be accessed at <http://www.usgs.gov/ohr/oars/>. The announcement number is: CR-2007-0589. The salary range is \$67,572-\$87,847 depending upon qualifications. The closing date is October 26, 2007.

U.S. citizenship is required. USGS is an Equal Opportunity/Affirmative Action Employer.

**U.S. Geological Survey (USGS)
Position Available**

Geologist

The USGS, Central Region Energy Resources Team, is soliciting interest from qualified individuals for a position of Energy Geologist in Lakewood, Colorado. This position will provide technical support to geologic studies of sedimentary basins in support of national and worldwide energy resource assessments. Candidates must be able to work as part of a multidisciplinary team of geologists, geochemists, geophysicists, and engineers. Excellent skills in writing and oral presentation of scientific findings are also required.

Applications (resume and application questions) for this vacancy must be received on-line via the USGS Online Automated Recruitment System (OARS) BEFORE midnight Eastern Time (Washington, D.C. time) on the closing date of this announcement. If you fail to submit a complete online resume, you will not be considered for this position. Requests for extensions will not be granted. If applying online poses a hardship for you, you must speak to someone in the Servicing Personnel Office listed on this announcement PRIOR TO THE CLOSING DATE for assistance. Contact Jennifer Farrell at 303-236-9566 or jfarrell@usgs.gov.

The OARS system can be accessed at <http://www.usgs.gov/ohr/oars/>. The announcement number is: CR-2007-0587. The salary range is \$46,597-60,574, depending upon qualifications. The closing date is October 26, 2007.

U.S. citizenship is required. USGS is an Equal Opportunity/Affirmative Action Employer.

**W.M. KECK PROFESSORSHIP IN GEOPHYSICS
DEPARTMENT OF GEOLOGY
BAYLOR UNIVERSITY**

The Department of Geology at Baylor University invites applications for the W.M. Keck Professorship in Geophysics, beginning August 2008. A Ph.D. in Geophysics, Geology or a related field is required at the time of appointment. The Department currently consists of 13 geoscientists, including geologists, geophysicists and geographers (please see the Department website at: <http://www.baylor.edu/Geology/> for further information).

Research: The Department seeks a nationally recognized individual who has a strong research agenda in geophysics or the use of geophysical data. Potential areas of interest may include, but are not limited to, earthquake or reflection seismology, potential fields, geodynamics, or geophysically oriented aspects of petroleum geology. We encourage communication and collaboration with a subset of the Geology faculty members that are currently engaged in studies in the general areas of petroleum geology, stratigraphy, structural geology, hydrogeology, and environmental geology and geophysics, and the successful candidate is expected to carry out a vigorous research program that involves both undergraduates and graduates. Research space is available in the 500,000 ft² "state-of-the-art" Baylor Sciences Building.

Teaching: We seek an individual with a strong commitment to excellence in teaching, and require that he/she contribute significantly to both the undergraduate programs in Geology and Earth Science by teaching a freshman course, a senior-level course, as well as contribute to the graduate (M.S. and Ph.D.) programs in Geology by teaching graduate courses or seminars in his/her areas of specialization. A laboratory that includes high-performance computers and software, as well as two large plotters, is available for both instruction and research.

Application Process: Send letter of application, including statement of teaching and research interests, curriculum vitae, copies of transcripts, and the names and contact information for three references to: Dr. Stephen Dworkin, Geophysics Search Committee Chair, Department of Geology, Baylor University, One Bear Place #97354, Waco, TX 76798-7354 (Tel: 254-710-2361; e-mail: Steve_Dworkin@Baylor.edu). The review of applications will begin December 1, 2007 and applications will be accepted until the position is filled. To ensure full consideration, application must be completed by December 15, 2007. Baylor is a Baptist university affiliated with the Baptist General Convention of Texas. As an Affirmative Action/Equal Opportunity employer, Baylor encourages minorities, women, veterans and persons with disabilities to apply.

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**Energy Resources
Faculty Position
Rice University
Department of Earth Science**

Houston is the energy capital of the world. The Earth Science department at Rice University anticipates an opening in Energy Resources and seeks an outstanding scientist at the junior level who will forge strong ties to the energy industry in one or more research areas, including basin analysis and stratigraphy, hydrocarbon systems, sedimentary processes, fluid flow in porous media, or carbon sequestration. We particularly encourage applications from and nominations of women and minorities.

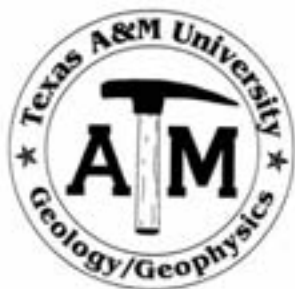
Successful candidates are expected to drive active research programs, supervise graduate research and teach courses for undergraduate and graduate students. Details about the department and its facilities can be found at <http://earthscience.rice.edu>.

Applications received by November 1st 2007 will receive fullest consideration. Please send a resume, research and teaching statements, and names of five or more references to:

Search Committee Chair
Earth Science Department, MS-126
Rice University, PO Box 1892
Houston, TX 77251-1892.

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TEXAS A&M UNIVERSITY
Department of Geology & Geophysics
Sedimentary Geology
Multiple Faculty Positions



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College Station, TX 77843

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<http://geoweb.tamu.edu>

The Department of Geology and Geophysics at Texas A&M University invites applications from individuals or groups for up to three tenure-track faculty positions in sedimentary geology, broadly defined. Areas of interest include but are not limited to fundamental and applied problems in sedimentary processes ranging from pore to basin scale, depositional environments, sequence stratigraphy, basin architecture, sea level change and coastal evolution, and energy and natural resource science. Hiring is anticipated over a range of ranks. Successful applicants will be expected to develop and maintain vigorous, externally funded research programs and contribute to undergraduate and graduate teaching. There is ample opportunity to collaborate with faculty in the Department, other research units in the College of Geosciences, and the Department of Petroleum Engineering.

Interested candidates should submit electronic versions of a curriculum vita, statement of research interests and teaching philosophy, the names and email addresses of at least three references, and up to four reprints by email attachments, to the Chair of the Sedimentary Geology Search Committee, sedsearch@geo.tamu.edu. Group applications should be submitted as a single package. Screening of applications will begin October 31, 2007 and will continue until positions are filled. A Ph.D. is required at the time of employment.

The Department of Geology and Geophysics (geoweb.tamu.edu) is part of the College of Geosciences, which also includes the Departments of Geography, Oceanography, and Atmospheric Sciences, Sea Grant, the Geochemical and Environmental Research Group (GERG), and the Integrated Ocean Drilling Program (IODP). Texas A&M University, a land-, sea-, and space-grant university, is located in a metropolitan area with a dynamic and international community of 152,000 people. Texas A&M University is an affirmative action/equal opportunity employer committed to excellence through the recruitment and retention of a diverse faculty and student body and compliance with the Americans with Disabilities Act. We encourage applications from minorities, women, veterans, and persons with disabilities. Texas A&M University also has a policy of being responsive to the needs of dual-career partners (hr.tamu.edu/employment/dual-career.html).

DIRECTOR'S CORNER

It Takes A Plan to Take Care of Business

By RICK FRITZ

This August I had the opportunity to attend the PGA Championship at Southern Hills in Tulsa. Southern Hills has the reputation of a good but very difficult course due to the narrow fairways, dense trees and precariously tilted greens.

I love to attend the practice rounds, and it was there that I realized that each pro and caddy are essentially *business units* – two people working on a common business plan.

It was interesting to see how each team approached its goals. Some pros spent a lot of time on the fairways while most focused on the short game. Some caddies would take notes for the pro – I noticed one was taking digital snapshots of every approach to the greens.

Without bias, there was no doubt that among the players Tiger Woods was one of the most intense. He spent much of his practice time around the green, throwing as many as five balls into each sand trap, taking multiple chip shots and especially putting all around the green.

I noticed he had a small paper notebook in which he made notes and diagrams.

Other business units seemed to have



Fritz

other goals during the practice rounds. Phil Mickelson was making some kind of instructional video, and on the last practice day, instead of practicing, John Daly went and gambled at the local casino.

* * *

The teams reminded me a lot of AAPG – especially in their diversity and complexity.

AAPG has numerous committees, divisions and subsidiaries that all share the same overarching goal, but each is approaching their goals in a different manner.

These entities are typically composed of member and staff teams.

Jim Blankenship, AAPG's geoscience director, came to work for AAPG a couple of years ago. Jim recently had retired as a ConocoPhillips manager, and I remember he said after his first few months that "AAPG was one of the most complicated organizations" that he had ever worked for.

Thinking back over my professional career I realized he was right. We have a lot of small teams working to build AAPG into an every greater organization.

Recently we had a meeting of the Division leadership – Division of Professional Affairs, Division of Environmental Geology and the Energy Minerals Division.

I was impressed with their intensity to develop products and services to define the Division and serve their membership. This is true of most of the volunteers working on AAPG programs.

Like the golfers – and especially Tiger Woods – it requires tremendous focus from both members and staff to keep on task and reach goals. In the 104-degree (Fahrenheit) heat of Southern Hills, Tiger focused on winning, Mickelson may have been focusing more on this training video and certainly Daly was focusing on something else – I am not sure what, perhaps image.

* * *

We are now focusing on a new business plan, which recently has been approved by the AAPG Executive Committee. It is the first time all entities

of AAPG have been asked to prepare a basic business plan with goals, metrics and actions items.

Of course, a requirement of managing AAPG's varied programs is to focus on the most important. I am pleased to say that as part of our corporate planning we have mechanisms to evaluate all of AAPG's programs and decide what has priority and those that should be divested or eliminated.

I also am pleased to say that there is no shortage of ideas for new programs for AAPG and all are open to consideration.

This year AAPG is placing our emphasis on:

- ✓ Student programs.
- ✓ Fundraising to support programs.
- ✓ Education and training for our membership.

These fit into AAPG's overarching long-range focus on membership and globalization.

Like the golfers, AAPG's member and staff teams are working hard and look forward to reaching our goals.

Division of Professional Affairs

What Does 'Professional' Mean?

By THOMAS E. EWING
DPA President

For 21 years I've sung with a German men's chorus. We sing all sorts of music, from church motets to classical men's chorales to show tunes, in German, Latin and English. For the last six years, I've been honored to serve as their musical director – only the sixth in 115 years. I am, in other words, an "amateur tenor," for whom the Mikado had harsh words! But for 26 years, I've been a professional geoscientist.

Which gets me thinking: What is an amateur and what is a professional, really?

The simplest meaning, the one used in sports, is that amateurs don't get paid and professionals do. But that isn't very enlightening. Plus, some paid people are pretty "amateurish," and some unpaid people (like my chorus) are very professional at times!

From the word origins, an "amateur" does something "for the love of it," because he/she loves to do it. A "professional" originally professed his/her vocation or calling to a religious or quasi-religious order.

Of course, many professionals (including you and me) may love what they do in their profession, and many of our singers feel an almost religious calling and devotion to their work.

* * *

A definition of "professional" that speaks to me is one from *American Heritage Dictionary*: "One who has an assured competence in a particular field or occupation."

Based on this I'd like to share a few things that "being a professional" means to me:



Ewing



✓ **We are trained and skilled to an industry standard.**

A profession in our sense requires years of study, including advanced study in our field leading to a degree, followed by years of experience. We can then be certified in our field by a certifying body like the DPA in AAPG – a body of our peers that says we have had study and experience that qualifies us as a professional; and we can be registered by a state agency.

An amateur geologist loves rocks and earth history as much as we do, but generally doesn't have the training. And because of that training ...

✓ **Our clientele (the public and the industry) can trust us.**

We are expected to produce geoscience findings and reports that meet a high standard of competence – work that can be relied on to be accurate and precise within clearly stated limits.

We are expected to keep our confidences, avoid conflicts of interest and respect other's work. We are expected to respect our data, to respect the truth and to behave honorably.

By being a professional, we create trust in a low-trust world, whether of

business or of politics. As part of this ...

✓ **We can and will stand by our work.**

When we write a report, give testimony or present a prospect we make statements supported by information and understanding. They may be disproven later (by drilling or more

research), but we will not disown those statements based on the knowledge available to us at the time.

We respect our data, and if we make speculations beyond the data (as we often do in generating a prospect), they are consistent with geological possibilities and clearly marked as unproven.

✓ **We know when a matter is beyond our expertise, and refer to other professionals.**

No geoscientist can be an expert on all of geoscience. We have techniques and specializations in which we are fully competent, things in which we will probably never be competent (but we should at least know what they are) and a number of things in between, competencies that we're working on. When an employer or client wants or needs competencies we don't have, we must refer them to, or collaborate with, other professionals who have those competencies.

This may be the hardest thing that consultants have to do – turning down work, admitting our limits. I do not have a full professional competency in, say, global climate or seismic processing – though I do have a professional interest

in them!

But admitting our limits is a key part of creating trust.

✓ **We are in the community of professionals, and carry forward a tradition.**

It is probably impossible to be a professional in isolation, partly because of points one and four. Through graduation, certification and registration, we profess our membership in a community, a "Guild of Geoscience" if you will, and are admitted to practice.

Full use of that community of professionals is essential to building our career, to collaborating with those who have complementary competencies, to formation of our knowledge base and our ethical skills. We carry forward the tradition of competence and trust, bringing new scientists into the profession through mentoring.

Petroleum geology has a proud tradition of finding and helping produce the energy that the world needs – the energy that has created the wealth, the power and the capacity of today's society.

And for future generations, we have a lot left to do.

* * *

If you strive to be a professional petroleum geologist (energy resource geoscientist) – and I hope you do – and want to associate with other professionals in promoting and shaping the profession, join the Division of Professional Affairs.

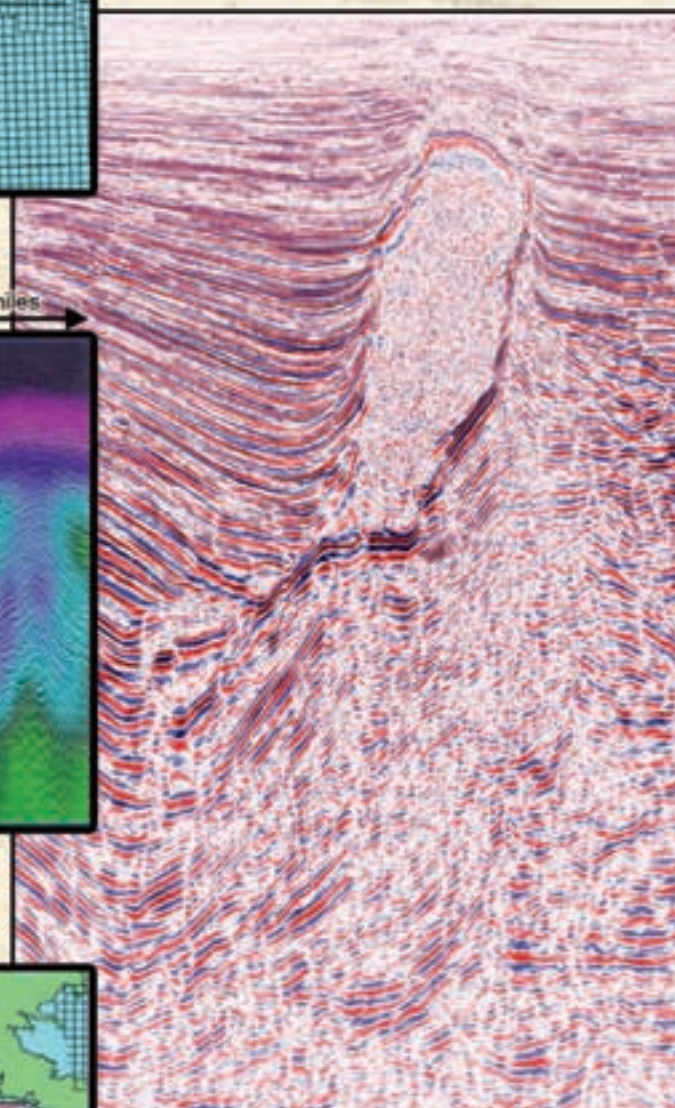
(And when you're in San Antonio, come sing "Ein Prosit!" with the "professionally amateur" San Antonio Liederkrantz!) □

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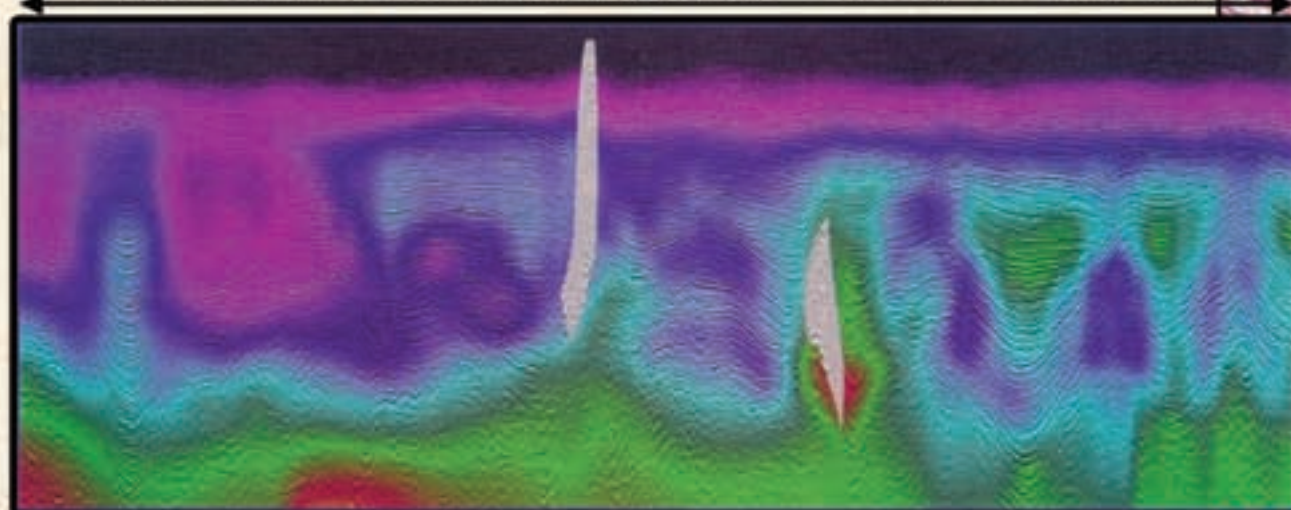
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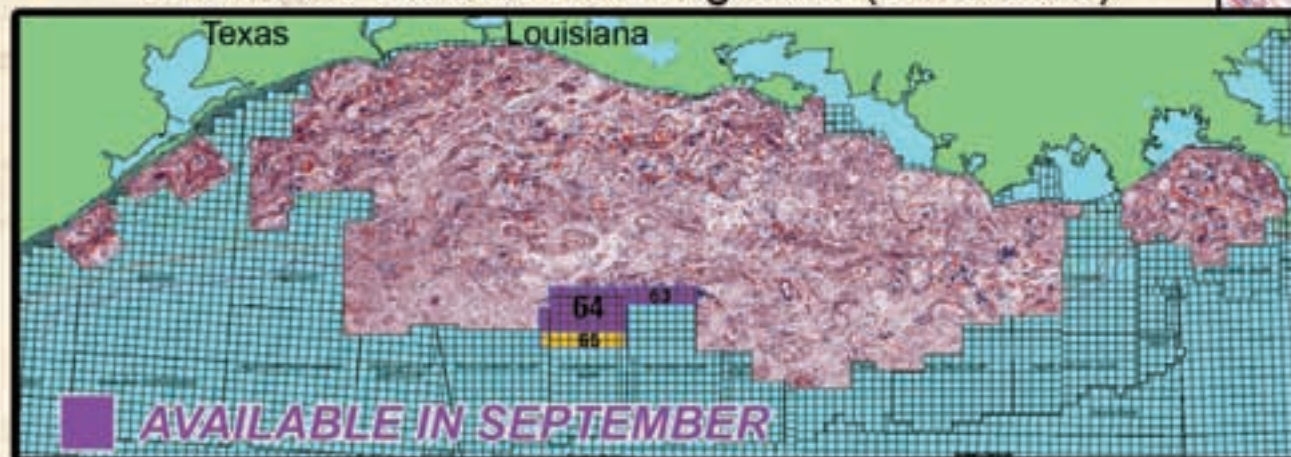


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- Improved vector fidelity
- Extensive operational range
- Enhanced sensor characteristics
- 5,000 ft operating depth

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