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Houston Geological Society
Volume 50 Number 1
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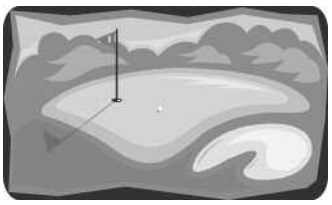

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About the Cover: Upright folding in Devonian Old Red Sandtsone from southwestern Wales, U.K. *Photo by Marli Bryant Miller, Structural Geology Professor at University of Oregon, Eugene.*

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Please fill out this form and return with your remittance — include your CURRENT EMAIL (important)

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by ***Linda Sternbach***

The Power of HGS Membership

I am very pleased to be the new HGS President for 2007–2008. I joined HGS as an Active Member in 1985, 22 years ago, when I was a new hire geologist at ARCO Oil and Gas. I remember when HGS Presidents Dan Smith and Clint Moore were hosting the dinner meetings at the Westin Oaks Galleria. Since then I have been elected to the HGS Board as *Bulletin* Editor (1997–98), Vice President (2005–2006) and President-Elect (last year). During the same 22 years I have changed oil and gas companies over 7 times, always for companies based in Houston. There are two constants in my work life: I know the ups and downs of being a working petroleum geoscientist, and I know that joining the HGS was the best career investment I ever made. The HGS offers both industry education and career growth through interaction with other geoscientists from all backgrounds and companies. You can find a lot of friends through HGS!

The HGS offers both industry education and career growth through interaction with other geoscientists from all backgrounds and companies.

This Year's Goals: Increased Membership and Improved Website

The HGS Board and committees are going to focus in the upcoming year on several goals.

1. We want to add 1000 new members to bring the Society from its current 3600 member level to 4600 active and associate members.

2. The HGS will look at ways to improve the benefits it offers to members, including offering strong technical program at meetings, new courses and fun social events.

3. The HGS website will get some improvements this year to better communicate with members through the front page, links and our weekly emails. The HGS website currently supports online event registration, online voting and online dues renewal.

4. The HGS will be doing its best to support sister societies such as GCAGS, AAPG and Geophysical Society of Houston (GSH). HGS will be getting aligned with the Geological Society of America, especially because the GSA is going to have a huge annual convention in Houston in October 2008 and HGS is helping host that convention thanks to the efforts of HGS Past Presidents Dave Rensink and Steve Brachman.

Active New Membership Program

Get ready for the HGS to change from a passive membership stance and start actively advertising HGS membership benefits out into the geoscience community! We are working on creating brochure material and will be contacting potential members via the website and regular mail. Our new brochure has a new theme: "HGS: A Local Society with a Global View." We encourage existing members to show others the new HGS online application under "JOIN HGS" on the webpage. It's all digital, including dues payment.

Even though the oil and gas and environmental businesses are going strong, the HGS has experienced a decline in membership since we had 4100 members in 2002. Our membership committee has evaluated this problem and concluded it has to do with once active members who don't renew at dues time, either because they decide not to or HGS failed to contact them, and not connecting effectively to potential new geoscientist members, including petroleum geologists and geophysicists and environmental geologists.

Future improvement comes down to providing member satisfaction so current members will renew and making an effective case for joining HGS. Some geologists like being visitors to HGS events without joining the Society because they erroneously think their membership is not important and that HGS will continue to plan technical talks and events regardless of how many members belong. The minimum involvement HGS membership requires is $24/year dues and registration in our database. As we access our database, we get direction for future programs by knowing who HGS members are, what they do and where they like to meet. Then the Society can deliver information and benefits back to the member via email event notices and planned programs.

From the President *continued on page 9*

HGS *Bulletin* Instructions to Authors

All materials are due by the 15th of the month, 6 weeks before issue publication. Abstracts should be 500 words or less; extended abstracts up to 1000 words; articles can be any length but brevity is preferred as we have a physical page limit within our current publishing contract. All submissions are subject to editorial review and revision.

Text should be submitted by email as an attached text or Word file or on a clearly labeled diskette in Word format with a hardcopy printout to the Editor.

Figures, maps, diagrams, etc., should be digital files using Adobe Illustrator, Freehand, Canvas or CorelDraw. Files should be saved and submitted in .eps (Adobe Illustrator) format. Send them as separate attachments via email or on a diskette or CD if they are larger than 1 MEG each, accompanied by figure captions that include the file name of the desired image. DO NOT EMBED them into your text document; they must be sent as separate files from the text. DO NOT USE POWERPOINT, CLIP ART or Internet images (72-DPI resolution) as these do not have adequate resolution for the printed page and cannot be accepted. All digital files must have 300-DPI resolution or greater at the approximate size the figure will be printed.

Photographs may be digital or hard copy. Hard copies must be printed on glossy paper with the author's name, photo or figure number and caption on the back. Digital files must be submitted in .jpg or .eps format with 300-DPI or greater resolution at the printing size and be accompanied by figure captions that are linked by the file name of the image. The images should be submitted as individual email attachments (if less than 1 MB) or on CD or zip disk.

Advertising

The *Bulletin* is printed digitally using QuarkXPress. We no longer use negatives or camera-ready advertising material. Call the HGS office for availability of ad space and for digital guidelines and necessary forms or email to ads@hgs.org. Advertising is accepted on a space-available basis. **Deadline for submitting material is 6 weeks prior to the first of the month in which the ad appears.**

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No. of Issues	Random* Eighth	Random* Quarter	Random* Half	Random* Full	Full	Full	Full	Half	Full	Quarter
10	$823	$1,387	$2,488	$4,734	$5,680	$7,830	$7,560	$6,858	$6,750	$2,700
9	$823	$1,387	$2,488	$4,734	$5,680					
8	$750	$1,260	$2,242	$4,307	$5,169					
7	$665	$1,123	$2,014	$3,834	$4,600					
6	$590	$990	$1,782	$3,392	$4,069					$1,890
5	$497	$837	$1,503	$2,860	$3,432	$4,698	$4,536	$4,104		
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BUSINESS CARD
$135 per 10 Issues – Send two cards
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HGS Website Advertising Rates

The HGS Website is seen by many people each day. In recent months, we averaged about 47,000 visitors per month. You have a variety of options for advertising your company, your job openings, or your services on the Website. There are two sizes of ads on the home page, a 165x55 pixel logo along the right-hand border and a new 460x55 Banner ad across the top.

We also offer a Banner ad across the top of our monthly Newsletters sent to registered users of the Website. Job postings are available for $100 for 30 days on the Website but they must be geoscience jobs of interest to our members. Current HGS members may post their resumes at no charge. If you have a product or service available at no charge, you can post it in the Business Directory at no charge. Geo-related Business Cards and job openings may be posted directly by any registered user and members may post their own resumes. They will be activated as soon as practical.

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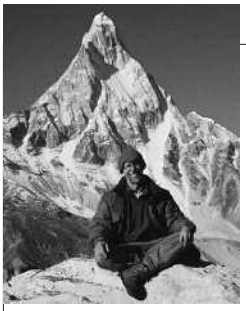

by ***Steve Earle***
hgs_editor@earthlink.net

Fifty Years of Communicating

As your new editor, I welcome you to the Houston Geological Society 2007-2008 season. Your officers and other volunteers are already hard at work insuring this will be another exciting year. This also marks the golden anniversary for the HGS *Bulletin*. Yes, we embark on Volume 50 starting with this issue and I am truly honored to facilitate the effort. I will talk about what I hope to achieve for the *Bulletin* and how you, the members, can help; but first, let's talk about the HGS.

The Houston Geological Society is easily the largest local geological society in the United States. We are affiliated with the American Association of Petroleum Geologists, and I like to think that the two organizations work together to provide all geologists and geophysicists with the support they need to continually expand their professional spheres (a not so subtle plug for us and the AAPG).

The majority of our members are Active Members and I encourage you to become more involved your society. The recent election is an interesting case study. This year was the first time we offered electronic balloting for our members and it was clearly well received with a record 949 votes cast. That's the good news. The bad news, this is only 26% of eligible members. This is representative of most our activities and I challenge you to do better.

The HGS hosts many different functions throughout the year. Perhaps the most significant are the lunch and dinner meetings. Some very interesting geology is discussed at these meetings and I guarantee, if you love geology, you will be stimulated. Plus the networking opportunities are phenomenal. Speaking of networking, our Shrimp Peel, Guest Night or one of the sporting tournaments are other venues to get out, mingle and have some fun. Additionally, we host a number of continuing education events. Try one or more of these this year. Be active, get involved.

I guarantee, if you love geology, you will be stimulated.

For those of you who have hung in thus far, it's time for my monthly "words of wisdom." This one seems appropriate as I begin my tenure here.

The journey of a thousand miles begins with a broken fan belt and leaky tire.

OK, back to the *Bulletin*. I hope you will find it lively and easy to read. I am in search of good technical articles or case studies and I encourage you to submit one. We also started a new "Recollections" column last year and this issue begins a "Rocks" column. This is where you can really help and have some fun at the same time. Both these are meant to be short stories that readers will find interesting, "Recollections" being an anecdote about your life in the patch, while "Rocks" tells the story of a significant rock. I wish to thank George Klein and Charles Sternbach for providing such fine articles to introduce the respective columns. Read and enjoy! And don't forget to send us feedback; we enjoy hearing from you. ■

50 Years Ago

I am struck by the quality of HGS presentations, both then and now. I imagine this one would be as appropriate today as it was 50 years ago.

from The HGS Bulletin*, Vol. 1, No. 1 – September, 1958*

The first regular meeting for the 1958-1959 year will be held on Monday evening, September 8th, on the 10th floor of the Houston Club…

Dr. Gordon Atwater, Vice President of the A.A.P.G. will present his paper on "Nature of Growth of Louisiana Salt Domes and its Effect on Petroleum Accumulation". The paper, prepared jointly with McLain J. Forman, will show how intermittent shifts of upward movement within salt domes has caused petroleum accumulations to play a game of musical chairs as favorable structural traps readjust themselves.

Applied Geoscience Conference (AGC)

US Gulf Region Mudstones as Unconventional Shale Gas/Oil Reservoirs Fractured and Non-Fractured

Interact and learn perspectives from unconventional reservoir characterization & knowledge specialists on hydrocarbon production from mudstone reservoirs (fractured, fracturable, and non-fractured).

Where are the new target mudstone targets in the Gulf Region? Could they be in the Bossier Fm., Eagleford Fm. or the Wilcox Fm.? What can we learn from the productive mudstone systems within the US Gulf Region?

October 1-2, 2007

The Downtown DoubleTree Hotel, Houston, Texas

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& MANY MORE INDUSTRY UNCONVENTIONAL LEADERS

To Register: Visit www.hgs.org

10 C.E.U Credit Hours will be earned with attendance

Attendance limited to 150 so register early!

This Applied Geoscience Conference (AGC) is sponsored by The Houston Geological Society

From the President continued from page 5

The membership committee has met on numerous occasions over some cold beers and ruminated on the strengths of being an active HGS member. I would like to mention and thank Jeannie Mallick, Greg Gregson, Jennifer Burton, Paul Babcock and Charles Sternbach for their insights on HGS membership trends. Jeannie and Charles are sincere in their opinion that HGS offers real values in long-term networking and social contacts to members. The consensus though is that HGS delivers value in the *Bulletin* (60–70 pages of information and articles in color delivered each month), website. email events, notices, online job hotline page, online directory and social events such as Guest Night and sporting events. HGS members also get discounts to technical meetings and fine arts group trips.

Thanks to Key People

This year the HGS Board of Directors has some new and talented people who will be setting up important programs. Gary Coburn of Murphy Oil in Houston is our new Vice President. His HGS duties include getting speakers for the Monday General Dinner and Wednesday Downtown Luncheon talks each month and overseeing the special interest group meetings. The HGS is adding two new Board Directors, Alison Henning and Richard Howe. Allison and Richard have been active on HGS Earth Science committees. Both of them are going to help improve HGS outreach to geoscience students and into the geoscience community. Two HGS Directors are continuing from last year: Bob Merrill and Bonnie Milne-Andrews. Our Board appreciates their advice and perspective on HGS business and direction.

I am really glad to be able to work with two Board members who I first met 20 years ago in my early oil business career. John Jordan (Treasurer) and Steve Earle (*Bulletin* Editor) worked in the same ARCO Oil and Gas offshore lease sale group as I did. We all had offices on the same second floor of the old ARCO office on Memorial Drive and Eldridge. Both John and Steve are very dedicated to serving the HGS and have ideas for improvement of their committees. There are many other important committee chairs who help make HGS the strong organization it is and I wish there was space to recognize them all, but for now I'd like to recognize two: Bill Osten (ConocoPhillips) as our volunteer website manager and Ken Nemeth (Schlumberger) as past Treasurer and Office Committee Chairman.

The Hidden Payback: Membership Lifts Everybody

The real value of joining HGS is that a rising membership lifts the Society in terms of both revenue and in people-power available to run volunteer programs that many members and nonmembers enjoy. The volunteer geologists who organize HGS often only hold office one or two years. HGS needs people in the pipeline (so to speak) every year to maintain groups such as the International Explorationists, North American Explorationists, Northsiders Group, Environmental and Engineering Geologists and other committees. I am optimistic in what HGS can achieve in membership growth and programs in the coming year. ■

HGS Welcomes New Members

Effective July 1, 2007

ACTIVE MEMBERS

Steve Appleton
Jim Bennett
Martin Buckley
James Dunnavant
Chi-Chin Feng
James Fowler
Raquel Hicks
Erik Hiemstra
Timothy Hurst
Karen Jacobson
Larry Kent
Larry Lew
Bruce Martin
Raymundo Martinez
Mark Moore
Raaj Patel
Tom Riley
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Jessica Rose
Thomas Schickel
Timothy Vance

ASSOCIATE

Karl Alfred
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Alexander Brokhin
Jonathan Grammer
Sam Pfiester
Rick Seeker

Welcome New Members

Letters to the Editor

HYDROTHERMAL DOLOMITE RESERVOIRS

"Most dolostone deposits in the geologic record owe their origin to hypersaline brines. They must, therefore, be considered as evaporite deposits. Exceptions are uncommon" (Friedman and Sanders 1967).

Your excellent paper in the March 2007 *Bulletin* cites the term "hydrothermal dolomite reservoirs". This labelling has been considered "confusing and meaningless" (Machel and Lonnee 2002). After teaching courses in carbonate reservoirs worldwide for forty years and being involved in exploration and production I do not allow my students to confuse themselves. Machel and Lonnee give the reasons why the term hydrothermal dolomite is useless and confusing.

I examined modern dolomite settings (Friedman 1991). The shallow-water facies consist of dolomite and gypsum. The rocks range from almost pure gypsum to pure tough dolostone so thoroughly cemented that sampling required hammer and chisels. X-ray diffraction analysis indicates the presence of anhydrite. The ‰13CPDB of the dolostone is −39.3‰ to −31.2‰. These strongly negative ‰13C values suggest that carbon of the dolomite came from methane. Methane forms when all sulfate has been reduced. Bacterial reaction was responsible for dolomite formation through the methane pathway. The syngenetic dolomite is like most dolomites of hydrothermal origin, but my students and I avoid this confusing bandwagon term.

The extreme fractionation of the oxygen is far outside the range of oxygen isotopic values generally reported for carbonate minerals. As indicated these strongly negative ‰13C values suggest that the carbon came from methane (Friedman 1991). This reaction occurs because sulfate reducers are more effective scavengers of H_2 than methane formers (Devol 1983, Kristjansson et al. 1982, Raiswell 1988). Bacteria convert methane to CO_2 and water in the oxidizing zone, thus making bicarbonate available for precipitation as a carbonate (as dolomite) (Friedman and Sanders 1978, p. 158). High desert temperatures may have facilitated such a dolomitization process (Friedman 1991).

Shinn and Ginsburg (1964) have shown that Recent gastropod shells and pellets have undergone penecontemporaneous dolomitization in their environment of deposition; they noted that the concentration of dolomite increases as the sediments are progressively lithified. The penecontemporaneous replacement dolomite described by Shinn and Ginsburg (1964) is considered as diagenetic dolomite, its formation being coincident with lithification; it forms by replacement of pre-existing calcium-carbonate sediment.

Most dolostone deposits in the geologic record owe their origin to hypersaline brines (Friedman and Sanders 1967). They must therefore be considered evaporite deposits. It seems safe to conclude that all dolostone deposits found in the geologic record, other than those that are recycled, formed under evaporitic conditions. In fact they have been termed "Hypersaline Ecosystems" (Friedman and Krumbein 1985). Hence all dolostones, whether syngenetic, diagenetic, or epigenetic, are the result of the action or reaction of hypersaline brines. Thus genetically it makes very little difference whether dolostones are formed in the depositional environment, such as syngenetic dolostone interfingering with limestone or whether later faults are responsible for dolomitization in earlier limestones, as observed in epigenetic dolostone (Friedman and Sanders 1967). The solutions to which both of these divergent types of deposits owe their origin are hypersaline brines.

Hypersalinity may result from: (1) the concentration by evaporation of sea water, either in sea marginal porous sediments or in the water mass itself; (2) concentration of fresh water by evaporation, as in intermontane basins; and (3) subsurface processes not altogether understood, by which waters are concentrated by diffusion, membrane filtering, or other processes. The salinity (or chlorinity) values of the brines from which syngenetic dolomite is formed in the Persian Gulf, fall within the range of salinity (or chlorinity) values of subsurface waters which have not been diluted by fresh meteoric water (Chave, 1960). Brines are available in the subsurface for the formation of both diagenetic and epigenetic dolostone.

In conclusion I wish to reemphasize the statement of Machel and Lonnee (2002) that the term "hydrothermal dolomite" is not helpful. ■

Gerald M. Friedman
Northeastern Science Foundation

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Letters to the Editor *continued on page 13*

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Bruce Hart's response:

I thank Gerald Friedman for his discussion of the Abstract for my March 2007 talk at the HGS North American Explorationists Dinner Meeting ("3-Dimensional Seismic Imaging of Hydrothermal Dolomite Reservoirs"). The focus of my presentation was on the use of seismic methods to map in three dimensions the distribution of porosity in several dolomite reservoirs from the Ordovician Trenton-Black River section of eastern North America. In the case studies I presented, the seismic data clearly indicate that dolomitization and porosity development were controlled by nearly syndepositional faulting and fracturing. Other geoscientists, who have studied the petrography and geochemistry of the Trenton-Black River, have labeled these reservoirs as hydrothermal dolomites, although I acknowledge that there is some controversy concerning the use of the term. I used the term "hydrothermal dolomite" deliberately because: 1) my group's seismic imaging results are consistent with a hydrothermal origin for dolomite and porosity (e.g., our results are not consistent with a sabkha or deep-burial origin); 2) I am convinced that the mechanisms proposed for hydrothermal dolomite formation in the Trenton-Black River are essentially correct (i.e., I have evaluated arguments and evidence presented by other scientists and have adopted a working hypothesis that I will stick with until the weight of new evidence forces me to abandon it); 3) it is opening up new exploration play concepts worldwide (part of my purpose was to expose attendees to concepts that are bearing fruit elsewhere); and 4) it is generating controversy (a blatant marketing technique to increase attendance at my talk, for which I won't apologize). Much has been learned about dolomitization since Gerald Friedman's classic publications (1960s through early 1990s) on the subject. New observations are challenging established ideas and, as a scientist, this pleases me. Readers interested in hydrothermal dolomites are encouraged to examine a collection of papers published in the November 2006 issue of the AAPG *Bulletin*, a "Theme Issue" on that topic. ■

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HGS General and North American Joint Dinner Meeting

by ***James R. Markello***
ExxonMobil Upstream Research Company

The Carbonate Analogs Through Time (CATT) Hypothesis—A Systematic and Predictive Look at Phanerozoic Carbonate Reservoirs

The Carbonate Analogs Through Time (CATT) Hypothesis defines an approach for developing systematic evaluations and predictive models of Phanerozoic carbonate systems and reservoirs for use in upstream exploration, development and production businesses. Four applications are illustrated in this abstract: 1. age-based pattern development, 2. comparative reservoir analysis, 3. analog selection and 4. predictive concept development.

Exploration geoscientists employ a host of established and successful concepts, tools and data to develop predictive models for field/reservoir occurrence and quality. However, as exploration successes decrease, alternative approaches are needed to refresh the exploration mindset. The CATT approach is presented as a hypothesis and as an alternative mindset for carbonate reservoir exploration. The geologic age-based concepts and products provide thought-provoking perspectives on known carbonate reservoir occurrences and offer a different way of thinking about predicting where undiscovered carbonate reservoirs may exist. At the very least, the Carbonate Analogs Through Time hypothesis provides a framework within which to organize all the concepts, facts and carbonate reservoir case studies one encounters throughout a career. In addition, it can be used as an approach for comparative analysis of systems. Reservoir engineers require detailed geologic-based reservoir parameters for simulations of reservoir performance. Such simulations form the basis for field development/depletion plans that invoke huge capital and operating expenses. Thus, it is imperative to provide the best possible input to simulation so that capex and opex investments are optimal. Typically, the input, if not derived directly from data collected within a field under development, has been gathered from "analog" fields. Thus, choosing the most appropriate analog is a critical task. We contend that the CATT approach provides the conceptual basis for choosing the most appropriate analogs.

The hypothesis is built upon the cumulative body of knowledge that demonstrates that carbonate and earth processes have differentially varied throughout Phanerozoic time.

The CATT hypothesis simply stated is that "insightful, high-confidence, age-specific predictive models for carbonate systems and reservoir occurrence, composition, stratal attributes and reservoir properties can be developed by summing the ambient conditions of the carbonate processes and earth processes at any geologic age." We term these models age-sensitive patterns, or themes. The hypothesis is built upon the cumulative body of knowledge that demonstrates that carbonate and earth processes have differentially varied throughout Phanerozoic time. These carbonate and earth processes include: 1. ecologic, oceanographic and sedimentologic process-based controls on carbonate factory development; 2. stratigraphic and accommodation process-based controls on carbonate stratal architecture; 3. secular trends of evolution, grain mineralogy, tectonics, climate, eustasy, ocean circulation and ocean chemistry; and 4. the stratigraphic hierarchy and the constraint that first- and second-order Phanerozoic stratigraphic successions (Sloss sequences) are age-fixed in geologic time. Two key products of this research area poster compilation of secular varying geologic controls synchronized to the time scale and a global atlas containing 29 present-day and paleogeographic map pairs with details of known Phanerozoic carbonate systems/reservoirs with age-based carbonate themes.

1. An example of developing an "age-sensitive pattern," or "time-based theme," is when the map-view configuration and spatial relationships of carbonate systems depicted on a paleogeographic map are convolved with the ambient states of the carbonate and earth processes for that time **HGS General Dinner** *continued on page 17*

HGS Golf Tournament

Monday - September 17, 2007

Place: Kingwood Country Club
Format: Four-man scramble
Featuring: Closest to the pin, Refreshment stands, Longest drive contest, Bar-B-Q dinner, Trophies, awards and prizes, Betting holes

This year's tournament will be a four-man scramble. A shotgun start at 11:45 a.m. will be followed by an informal buffet dinner with a presentation of awards at the Kingwood Country Club. Players may select their own course and foursome or be placed in a foursome by the tournament committee. The field will be flighted after play based on score. Entries will be limited and will be accepted on a first-in basis.

The entry fee will be $125.00 per person, or $500.00 per team. Entry fee includes green fees, golf carts, refreshments, driving range use with practice balls and a buffet award dinner with door prizes.
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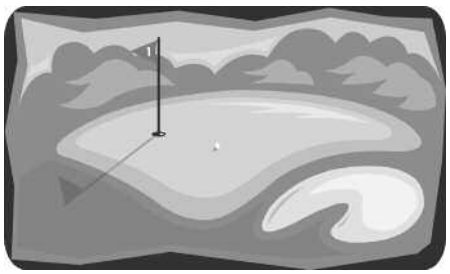

SCHEDULE OF EVENTS

9:30 – 11:30 a.m.	Registration and free use of driving range
10:30 – 11:30 a.m.	Optional lunch
11:45 a.m.	Shotgun start
4:45 p.m.	Cash bar, open buffet
5:30 p.m.	Dinner with awards presentation

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Foursome Members *(Please Print)*	Company Name	Phone Number
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Foursome Captain's e-mail _____

If you wish, please circle your course preference: Island Lake Marsh

HGS General and North American Joint Dinner continued from page 15

period. In the Cambro-Ordovician case, the key carbonate systems/reservoirs that form the basis for this time-based theme are in the Ellenburger Formation of West Texas. Characterization of the theme can be made with simple declarative statements that capture key system and/or reservoir attributes. Expectations for typical Cambro-Ordovician carbonate reservoirs are (a) meter-scale peritidal mud-dominated cycles, (b) thin-bedded, heterogeneous layering, (c) thrombolitic and/or microbial buildups only, (d) moderate reservoir quality from dolomitization, (e) regional karst porosity beneath the top-Sauk unconformity and (f) locally significant fracturing. The validation of this age-sensitive pattern, or theme, is whether other coeval carbonate systems that formed on the other margins of Laurentia, Baltica and Siberia can be characterized similarly.

2. Sometimes there are significant differences between carbonate systems and reservoirs within a geologic time period or age. We propose that the CATT Hypothesis and the atlas products (paleogeographic, paleoclimate and paleo-oceanographic maps) provide an approach for comparative analysis between systems within a geologic age that gives meaningful understanding for the causes of the differences. Since 2003, we have developed additional maps of paleoclimate and paleo-oceanography based on recent publications from National Geographic for each of the 29 Phanerozoic time slices. These maps were empirically developed based on present-day trends. Another ExxonMobil in-house project has completed parametric modeling of various time slices to evaluate these empirically-based maps. There is very good agreement, which increases confidence in comparative analysis between coeval systems with dramatically different attributes. An interesting case in point is contrasting Late Jurassic systems/reservoirs of the Arabian Basin (Arab Formation fields) with those of the northern Gulf of Mexico (Smackover Formation fields). Many key attributes that control reservoir properties are compared between the examples.

3. Demonstration of the utility of these tools for analog selection is illustrated by explaining the heritage-Mobil example of farming into Tengiz Field in the mid-1990s. Acquiring a working interest in a field under development requires knowledge of field ultimate reserves and some measure of investment return. Typically, these numbers are derived by simulation. Thus, we were consulted by Mobil engineers as to the best analog for data to input into a Tengiz simulation. Would Arun Field in Indonesia be okay? Our answer was absolutely not! Based on our CATT approach, the best analogs would be age-equivalent fields nearby in the Volga-Ural trend or in North America (either Pennsylvanian-age Salt Creek Field in the Permian Basin or one of the Devonian fields in western Canada).

Our rationale was that better analogs exist between age-equivalent systems due to more similar biota, mineralogy, long-term climate, carbonate factory, profiles and diagenesis. Arun is a Miocene (icehouse climate) isolated platform consisting of Neogene scleractinian-dominated framework biota with abundant microporosity. The reservoir fluids are gas-condensate. Tengiz is also an isolated platform, but is mid-late Paleozoic in age (greenhouse to icehouse conditions) and consists of tabulate, rugosan corals and stromatoporoids, similar to the Late Devonian reservoirs in Caroline and the Rainbow Fields of western Canada. The Early Pennsylvanian section at Tengiz contains abundant ooids with moldic porosity, very similar to the Salt Creek Field. Although Tengiz Field has some karst porosity, it does not appear to be as extensive as in the Mid-Cretaceous Golden Lane Field of Mexico. Further, greenhouse Cretaceous rudist communities and associated grainstones typically have very different stratigraphic architecture from icehouse Carboniferous systems. Walker Creek and Jay Fields are greenhouse attached-ramp systems in the Gulf of Mexico Basin with well-developed oomoldic porosity; however, unlike the Tengiz feature, the strata are extensively dolomitized. Slaughter Field is late Permian age and is located on the attached Northwest Shelf of the Permian Basin. The reservoir units in the San Andres Formation are totally dolomitized with pore structures and rock properties very different from those at Tengiz.

4. The CATT Hypothesis coupled with basic concepts of carbonate geology, sedimentology and stratigraphy can be used to construct numerous and different types of predictive concepts. Predictive concepts can range from very simple to quite complex. An example of a simple CATT-based predictive concept is "Late Permian ramps will lack major framebuilt boundstones, be peloid/ooid-dominated and be mostly dolomitized with associated evaporites." Another predictive concept for predicting stratal architecture of isolated platforms is based on age and climate-driven eustasy. For platforms formed during icehouse times (Late Carboniferous to Early Permian; Late Tertiary), fourth-order high-amplitude, high-frequency sea level changes result in vertically discontinuous sequences with internal lateral facies heterogeneities. Marginal

HGS General Dinner *continued on page 19*

HGS General and North American Joint Dinner *continued from page 17*

boundstones will be vertically separated. In contrast, greenhouse climates (Ordovician to Devonian; Jurassic to Paleocene) result in moderated low-amplitude, low-frequency sea level fluctuations, and the resulting stratal architecture is vertically connected with quite homogeneous lateral facies relationships. Thus, just by knowing the age of a carbonate system, the global climate regime is known, and an a priori expectation or prediction of stratal architecture can be made.

The Carbonate Analogs Through Time research idea was conceived in 1991 at Mobil Research. Many Mobil geoscientists contributed to the maturing of the idea and to the development of the CATT products, especially the 1992 Mobil Global Themes Project team (detailed Global Paleogeographic Time-Slice maps) and members of the MEPTEC Carbonate Research Team. The project was completed in late 1999 just before the ExxonMobil merger in 2000. ■

Biographical Sketch

James Markello received a BS in geology and biology from the University of Rochester in 1976 and an MS in geology from Virginia Polytechnic Institute and State University in 1979. He began his career with Chevron as a Production Geologist before moving to Superior's Research Lab as a carbonate specialist in 1981. He has continued his carbonate research with Mobil and ExxonMobil ever since. Mr. Markello's interests include carbonate stratigraphy, sedimentology, diagenesis, reservoir characterization and the carbonate reservoir analogs through time. He enjoys field work on both modern and ancient systems. This talk was part of the 2007 AAPG Distinguished Lecture Tour for the Middle East.

Remembrance

Rufus Joseph LeBlanc, Sr.

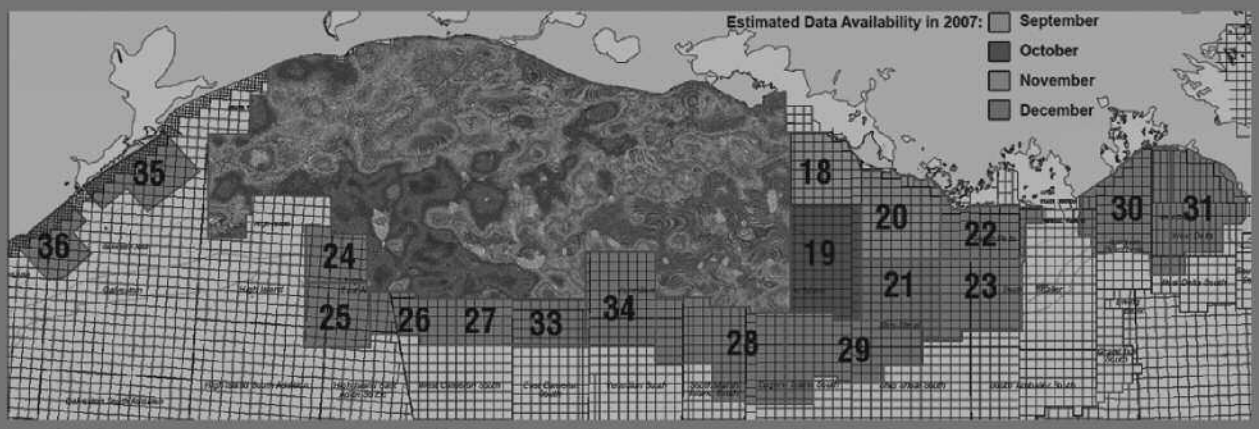
Rufus Joseph LeBlanc, Sr., a loving husband, father, "Gramps," uncle, friend and storied geologist, passed away on Tuesday, June 19, 2007. Rufe received a bachelor's degree in 1939 and a master's degree from LSU in 1941, both in geology. Under the dynamic influence of Dr. Harold Fisk, Rufe's teacher, early mentor and thesis advisor, Rufe developed his interest in Gulf Coast stratigraphy and sedimentation, an interest he actively pursued all of his life.

His first professional job was with Fisk working on the geology of the Mississippi River's alluvial and deltaic deposits for the Mississippi River Commission. Rufe began to develop concepts and an understanding of clastic sedimentation and stratigraphy that he so carefully documented, applied and communicated during his entire career. After seven years, both professor and assistant moved to Houston in 1948 with Fisk becoming Chief Geologist for Humble Oil Co. and Rufe joining Shell Oil Co.'s Exploration & Research Division, where he organized a research team to study Holocene clastic sediments. In 1953, Rufus was appointed Manager of Shell's Geologic Research Department. In this capacity, he organized and managed an expanded research effort on the study of clastic and carbonate stratigraphy and sedimentation.

Although Rufe was a prodigious creator of new research ideas, this modest man always shifted a great deal of the credit to his associates. Through his teaching and field trips, he contributed to the education and advancement of literally thousands of geologists, geophysicists and engineers. Many ideas leading to significant discoveries by his students were sown in his lectures, talks and field seminars. Rufe's down-to-earth approach and manner of speaking enabled him to communicate effectively at all levels. He received many awards, including honorary memberships in AAPG, HGS and SEPM. His most distinguished honor was to be the AAPG's 1988 Sidney Powers Memorial Award winner. He was selected over some 40,000 geologists. In lieu of flowers, contributions may be made to AAPG Foundation, PO Box 979, Tulsa OK 74101; Hospice at the TMC, 1905 Holcombe, Houston TX 77030; Houston Geological Society, 14811 St. Mary's Lane, Ste. 250, Houston, TX 77079; St. Vincent de Paul Catholic Church, 6800 Buffalo Speedway, Houston, TX 77025; or your charity of choice.

Remembrances *continued on page 27*

More depth



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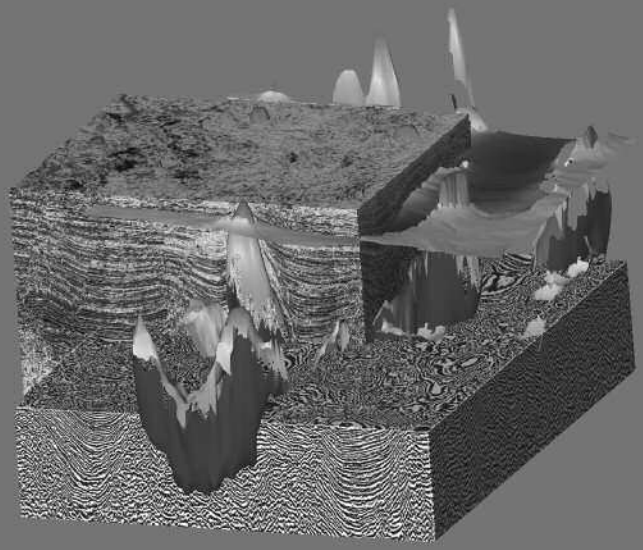

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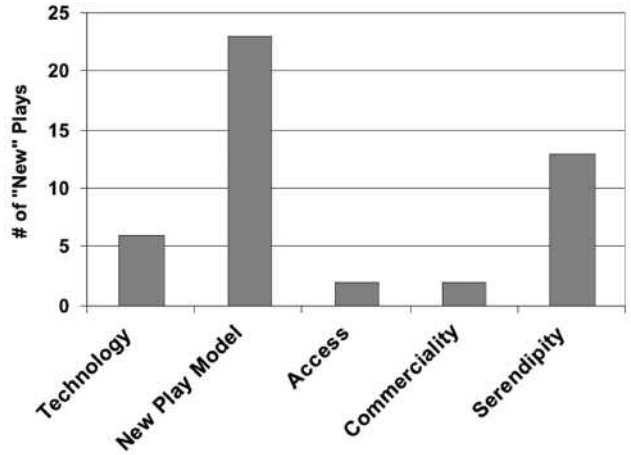
by ***Robin Hamilton, David Steele, Tola Adeogba, Colin Grant, Larry Garmezy***
Shell International Exploration and Production Inc., Houston, TX

Identifying New Hydrocarbon Plays—The Challenge and an Approach

In the process of developing new play concepts within Shell's Exploration New Ventures group, a framework is built around the existing technical understanding of the working petroleum system in the basin. The key foundational elements of petroleum charge, stratigraphy and entrapment are individually expressed. The objective is to identify, map and exploit both the technical and, more often, the intellectual "white space" that exist around our understanding of a focal basin or petroleum system. In the simplest sense, new ideas are most often grown within these gaps or discontinuities in basin understanding. There are then some useful "prompts" that serve to seed some of the new play ideas. "Go Deep" initiates a structured review of possible plays, stratigraphically deeper than the proven play levels but within the same overall petroleum charge system. It follows that "Go Shallow" triggers an interrogation of the shallower limits of the petroleum system, where the questions are more often around developability of any shallower resource. "Go Lateral" prompts a search for prospective stratigraphy laterally offset to the known section. It includes the identification of basinward equivalents of missing section seen at the basin margins and the candidate stratigraphic traps downdip of conventional trap plays. "Go Lateral" also involves investigation of the lateral limits of the charge system and the possible new play configurations that could be invoked through long range lateral migration.



Nature of breakthrough that led to success

The talk will illustrate successful application of the approach with case examples and an outline of the global play database that has been built to allow the identification and application of appropriate play analogs in building new plays. ■

Biographical Sketch

Robin Hamilton is an exploration geologist and the manager of Shell's Global Exploration New Ventures team, based in Houston. He graduated with both a BSc and PhD from the University of Aberdeen in his Scottish homeland and has since been with Shell for 21 years. Dr. Hamilton has worked in both Exploration and Development roles in many operational basin areas with Shell EP, including the North Sea, Gulf of Mexico, Niger Delta, Lower Congo basin and SE Brazil.

As leader of the New Ventures team, he recently has been involved in global basin screening and the identification and maturation of viable new venture opportunities for Shell. An additional role has been in the promotion of a more back-to-basics play-based approach to Shell's exploration efforts.

Outside work, Robin is a full-time father, barely able to outrun his two young boys, but he still finds time to compete in hang gliding at the international level and is a multiple world-record holder in that sport.

Tuesday, September 18, 2007

Crowne Plaza Hotel (former Sofitel Hotel) • 425 Sam Houston Pkwy. North
Social 11:15 a.m., Luncheon 11:30 a.m.

Cost: $31 Preregistered members; $35 non-members & walk-ups

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by Theodore C. Lukas, *Consultant*
Peter Schwans, *International Exploitation, Devon Energy Company*

Use of High-Resolution Core Description Data to Risk Net Pay from Log-Based Petrofacies for Thinly-Bedded Deepwater Channel Complexes, Zafiro Field, Equatorial Guinea

Log-based facies or petrofacies contain thin beds at or below log resolution. Individual beds range from 0.01 to 2 feet (0.003 to 0.6 m). As a result of thickness variations and stacking densities, estimates of thin-bed net pay are associated with significant uncertainty. Cores from Zafiro Field, Equatorial Guinea, were used to define thin-bed types and the ranges of uncertainties associated with the beds identified via logs and cores.

The Zafiro Field of Equatorial Guinea comprises a series of stacked channel complexes of Miocene-Pliocene age deposited in the mid- to lower slope position of the Niger Delta. Thin-bed environments in channel complexes include crevasse splays, avulsion related lobes, lobes associated with overbank channels, levees, and indeterminate remnants of near-channel overbank. High-resolution core description data (100 samples/ft) from proximal to distal overbank deposits were compared to log-based petrofacies computations. Data from the two methods were compared as a function of hydrocarbon saturation, bed thickness, lithology and grain size and used to condition the computations. This was compared to the pay that was computed and predicted from the petrofacies probability curves. A set of confidence levels are applied to a range of oil saturation (S_o) cutoffs to better define the uncertainty range. The described approach allows for better benchmarking and a more rigorous approach to log-based thin-bed calculations for use in geostatistical models. ■

The described approach allows for better benchmarking and a more rigorous approach to log-based thin-bed calculations for use in geostatistical models.

Biographical Sketches

Theodore C. Lukas is a Houston-based geologist specializing in clastic core description and borehole image processing and interpretation, with an emphasis on the integration of core description, core and borehole images, and conventional core and log data. He has extensive experience worldwide working in non-marine to shallow and deepwater marine depositional environments. He has 20 years of major oil company experience, including over 15 years at Exxon Production Research Company in the Clastic Facies Group and Petrophysics Section and nearly 4 years at Texaco Upstream Technology in Reservoir Characterization. From 2002 to 2005 he consulted for Occidental of Elk Hills, working on various shallow- and deepwater clastic core description projects, including borehole image processing and interpretation for both fracture characterization and integration with depositional facies analysis.

From 2005 to the present Mr. Lukas has worked for Devon Energy International, mainly for the Zafiro Team, which he assisted in the description of over 2,500 ft of core through the Pliocene Sausage and Zafiro deepwater reservoirs, developing a system to digitally capture and characterize the data for export to geologic models. He received a BS in geology from SUNY New Paltz (1976) and an MS in geology from the University of Florida (1978) and is a member of AAPG.

Peter Schwans is a Senior Geological Advisor in the International Division of Devon Energy in Houston specializing in clastic sedimentology, sequence stratigraphy and geological

Northsiders Luncheon Meeting *continued on page 43*

Tuesday, September 18, 2007

Black Lab Pub, Churchill Room • 4100 Montrose Blvd.

Social 5:30 p.m., Dinner 6:30 p.m.

Cost: $25 Preregistered members; $30 non-members & walk-ups

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by ***Darren M. DeFabo, P.E., and Ed Dolan, P.G.***
Geosyntec Consultants, Inc.

Complex Horizontal Well Remediation Technology Allows Fast-Track Brownfields Development

Beginning in May 2003, a new Federal Reserve Bank building was constructed in Houston, Texas at a brownfields site having a gasoline product plume beneath the footprint of the planned building. The site had been in remediation with a vertical well dual-phase extraction system. Operation of this system was discontinued because it was not projected to achieve regulatory closure prior to the building construction start date. Vertical wells needed to be abandoned to provide room for the new building. A new system was needed that would operate without interfering with construction and use of the bank. The system needed to be designed and installed within four months to avoid interfering with the construction schedule. The property offered only limited space for installing the components of the remediation system.

Due to the strong vertical and horizonal heterogeneity, the 3-D geologic model was constructed using a method known as geologic indicator kriging...

To meet these demands, a system was designed that takes advantage of the spatial flexibility offered by horizontal wells. Two horizontal multi-phase extraction wells were installed. The geometry of these two compound curved well paths allowed placement of the well screens within the outline of the product plume beneath the building, in spite of inadequate space at either end of the wells for conventional step-back to entry and exit holes along a straight line. At the northern end of the property, the two wells met in a single underground vault. The well paths diverged under the product plume, and at the southern end of the site, each well intersected a narrow vertical sump in the subsurface. The horizontal well screens were placed with a gentle grade to allow groundwater and gasoline product to drain into the vertical sumps. A vacuum was applied to both ends of the horizontal wells. The complete multi-phase recovery system comprised the two horizontal wells (with the two vertical sumps) and nine vertical recovery wells.

The horizontal well system was designed using a three-dimensional (3-D) groundwater flow model. The model was constructed and calibrated on the basis of a 3-D geologic model of the subsurface, pumping tests, slug tests, laboratory permeability tests and grain-size analyses of soil cores. Due to the strong vertical and horizontal heterogeneity, the 3-D geologic model was constructed using a method known as geologic indicator kriging, which is incorporated in C-Tech Development Corporation's Environmental Visualization System (EVS). This method utilized "non-hierarchical" non-correlated lithologic descriptions from each boring location and geostatistically interpolated the geologic material type at each node of the model grid. This method does not require a geologic hierarchy be determined and is useful when modeling complex floodplain deposits. The material types were then exported in a layered fashion to populate the hydraulic conductivity zones within each of the groundwater flow model layers. The 3-D model also allowed the determination of the sediment types anticipated to be encountered during drilling and assisted in modifying the borehole path during drilling operations to optimize the recovery of the planned wells. Aquifer tests and grain-size analyses indicated a wide range of hydraulic properties. To meet the time constraints of the design schedule, the model construction reflected a conceptual model of the subsurface that captured the essential spatial trends in hydrogeologic properties. The model accurately and conservatively predicted the flow rate of the system and the degree of dewatering in the area impacted by the gasoline plume.

The system operated for approximately 16 months and recovered approximately 10.2 million gallons of groundwater and approximately 89 thousand pounds of hydrocarbons (approximately 98% recovered in the vapor phase).

The innovative design of the dual-phase extraction system enabled the development of the brownfields site. Conceptualized

HGS Environmental & Engineering Dinner Meeting *continued on page 27*

Environmental and Engineering Meeting *continued from page 24*

3-D geologic and recovery modeling accelerated the design of the system. Horizontal wells with compound curvatures and blind terminations intersecting vertical sumps accommodated severe constraints at the site. A compressed design-build schedule was met, and construction of the bank began on time. The system met performance specifications, including dewatering goals and hydrocarbon recovery rates, and remediation goals were met. Site closure was granted by the Texas Commission for Environmental Quality in January 2006. ■

Biographical Sketches

Darren DeFabo has a BS degree in mechanical engineering and an MS degree in industrial administration (MBA) from Carnegie Mellon University. He is a licensed professional engineer with over 10 years' experience in environmental engineering. Mr. DeFabo works for Geosyntec Consultants, Inc. where he specializes in brownfields remediation including due diligence, site investigation, risk-based corrective action and remediation.

Edward Dolan has BA degree in geology from the State University of New York at Geneseo. He is a professional geologist with over 17 years of expertise in all phases of geologic and hydrogeologic environmental site assessments. He has executed projects involving the delineation of various contaminants (including dissolved phase species, LNAPL and DNAPL) in soil, sediment, fractured rock, karst and groundwater. Mr. Dolan has focused on the hydrogeologic aspects of remedial investigations and designs. Other specialties include the use of three-dimensional visualization (stratigraphic and contaminant modeling) and three-dimensional groundwater modeling programs. He currently works for Geosyntec Consultants, Inc.

Remembrance

Bert Freelan Scales

Bert Freelan Scales went to be with the Lord on Monday, June 18, 2007. He was 74 years old. He graduated from Electra High School in 1949, after which he served in the Korean War as a United States Army Ranger. Mr. Scales also worked as a carpenter during these younger years, learning skills that he would apply during the rest of his life and teach to his boys. He married Yvonne Rodgers on April 18, 1956, daughter of the late A.E. and Lois Rodgers of Electra, Texas.

Mr. Scales earned a bachelor's degree in geology from Midwestern University in Wichita Falls, Texas in 1959 and a master's degree in geology in 1961 from the University of Nevada in Reno, Nevada. He then embarked on an amazing career in the oil and gas industry that lasted a lifetime. To refer to his activities in the oil and gas business as a "career" is not really accurate. He loved what he did. It was his avocation, his hobby and his pleasure.

Mr. Scales began his career as a geologist with Texaco, for whom he worked in various positions for the next 17 years. During his time with Texaco, he and his family lived in a number of places in the United States and around the world; however, Houston had been his home since 1969. In 1977, Mr. Scales resigned from Texaco and for the next seven years worked for a number of independent oil and gas exploration and production companies, primarily as vice president of exploration. In 1984, Mr. Scales founded his own oil and gas exploration and production company, Natural Reserves Group, Inc. or NRG. The early to mid-1980s was a difficult time in the oil and gas business to start a new venture, but through sheer will, determination and extremely hard work he was able to turn NRG into a very successful company. Contributions may be made to Westbury Baptist Church, 10425 Hillcroft Street, Houston, TX 77096-4798.

Remembrances *continued on page 32*

Thursday, September 20, 2007

Petroleum Club • 800 Bell (downtown)
Social 11:15 a.m., Lunch 11:45 a.m.

To attend this meeting you can register online at www.sipes-houston.org, call (713 651-1639), fax (713 951-9659), e-mail (bkspee@aol.com), or mail your reservation to Mrs. B.K. Buongiorno (1001 McKinney, Suite 801, Houston, TX 77002) by Tuesday July 17, 2007. Payment is required by regular mail or pay at the door with check or cash. Members and Affiliates who register by that date pay $30. The cost is $35 for guests and new registrations at the door. No-shows will be billed.

SIPES
Luncheon Meeting

by ***Jason Robinson***
MTEM Limited

Using ElectroMagnetics for Onshore Hydrocarbon Detection and Delineation—A Case Study from Trinidad

The Multi-Transient Electromagnetic (MTEM) technique produces resistivity profiles that can enable the identification of hydrocarbons in the subsurface. Multi-Transient Electromagnetic is the time-domain implementation of a Controlled Source ElectroMagnetic (CSEM) technique. MTEM enables deep resistivity imaging from surface acquisition, both onshore and offshore. It can be used as an adjunct to other data and methods or in some cases as a complete replacement.

The MTEM method involves the injection of electric current into the earth from a source bi-pole and the measurement of the resultant electric field using a spread of receiver bi-poles. The data are processed and then inverted to deliver resistivity sections in depth that delineate subsurface resistors that can be interpreted as hydrocarbon-bearing strata. The basic method, survey design, field operations, processing, inversion and interpretation are described. Particular attention will be paid to the data flow to demonstrate that this is not just another black box approach.

Particular attention will be paid to the data flow to demonstrate that this is not just another black box approach.

A case study is shown wherein MTEM is used onshore Trinidad. The prospect terrain comprises low-lying hills covered by dense tropical forest and the subsurface is faulted and fractured. Seismic data often give poor results and can be costly. The project objective was to identify field extension by imaging stacked reservoir sands at depths between 450 and 5000 feet (100–1500 m).

Excellent data quality was achieved and the thrust faulting is clearly visible on all sections. The faults tie to surface locations confirmed with surface geologic mapping. Prospective pools in this area appear as resistivity anomalies (>15 ohm-m) that stand out from the background resistivity (1–3 ohm-m). Past production can also be identified in the section, demonstrating MTEM sensitivity to the time-lapse effect of saturation changes resulting from hydrocarbon production. ■

Biographical Sketch

Jason Robinson graduated from Oxford Brookes University, England, with an honors degree in earth sciences in 1989. He has 18 years' experience in the oil and gas industry.

Mr. Robinson spent 15 years with Schlumberger, handling a broad range of assignments both domestically and internationally. He was a field engineer from 1989 to 1993 and worked in research and development through 1997 before moving on to the positions of chief geophysicist, regional marketing manager and product champion. All positions involved new technology development, strategic positioning, business planning and commercialization.

He helped start IDS, a drilling software company, in 2005 before returning to the geosciences as Vice President of MTEM for North and South America beginning in early 2006.

Mr. Robinson has published papers on multi-component seismic methods as well as electromagnetic methods. He continues to develop new technology commercialization models for appropriate business applications.

Wednesday, September 26, 2007

Petroleum Club • 800 Bell (downtown)
Social 11:15 a.m., Lunch 11:45 a.m.

Lunch meetings are $30 per person (until the Tuesday before the meeting); $35 for late registrations and at the door - no shows will be billed. Register online at http://www.sipes-houston.org/.

HGS General Luncheon Meeting

by ***Cathy L. Farmer, Debra H. Phillips, R.H. Benthien, D.V. Dailey, K.L. Hargrove, B. W. Horn, and D.G. Derbecker***
BP America Inc

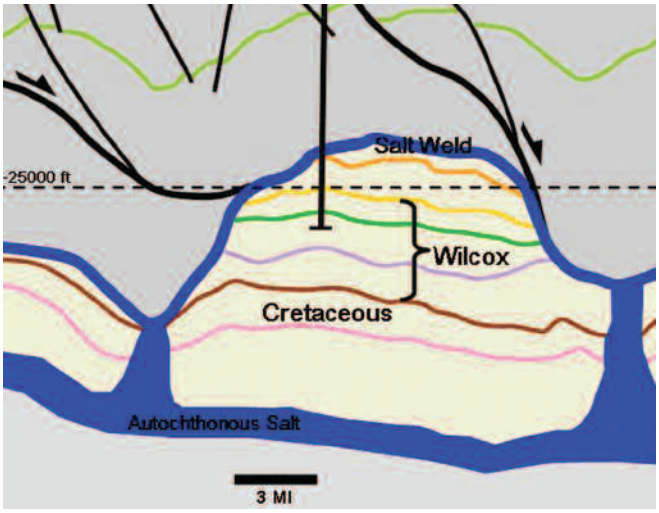
Structural and Sedimentological Evolution of the Ultra-Deep Gas Play Fairway—Gulf of Mexico Shelf, Texas and Louisiana

Ultra-deep drilling activity on the Gulf of Mexico shelf is targeting a new deep gas play fairway below established older production. The fairway extends from the Mississippi delta across the Texas shelf in the section below 25,000 feet. Large relatively simple anticlines with inverted Paleogene and Cretaceous sediment packages have been identified. These packages have been mapped regionally and locally to identify isopach thicks that should be favorable for the accumulation of reservoir sandstone. The main exploration risks identified for the ultra-deep fairway are reservoir presence and quality.

Restoration of the structures through geological time indicates a complex interaction between salt thickness, depositional thickening and structural geometry

The targeted deep structures contain sediments that exhibit internal ponded geometries with thickening axes coincident with present day anticlinal axes. Closure on many of the deep inversion anticlines formed very early as a result of initial autochthonous salt withdrawal. The deep structures are de-coupled from the shallower growth faulted section. Restoration of the structures through geological time indicates a complex interaction between salt thickness, depositional thickening and structural geometry.

Comparison of structures across the ultra-deep trend reveals important differences in the depositional and structural evolution of the anticlines. Three-dimensional seismic data is being used to identify some of these differences in depositional and structural history. Internal geometries of sediment packages are identified in their current structural setting as well as in their original depositional setting by flattening on major time horizons. Viewing seismic data in this manner assists in understanding the inversion history related to evacuation of the underlying autochthonous salt. ■



BP's El Dorado Area. Will K well planned to spud fall 2007 Sub-weld, four way closure with 25,000 Upper Wilcox target.

Biographical Sketch

Cathy L. Farmer is a Senior Exploration Geologist for BP's Gulf of Mexico Deep Gas Exploration Team based in Houston, Texas. In her current role, she is responsible for delivering prospects for BP's Deep Gas Exploration program. The talk that she is presenting for HGS received the Matson Award for best paper at the 2007 AAPG convention in Long Beach, California.

HGS Luncheon Meeting *continued on page 32*

HGS Luncheon Meeting continued from page 31

Ms. Farmer joined Amoco in 1981 as an Exploration Geologist for the Western Thrust Belt Group in Denver, Colorado. During her years of experience with Amoco and now BP, Ms. Farmer has held a variety of exploration, development and production geology positions for both domestic and international upstream projects. She was the Chief Geologist for BP Venezuela and was the geologist responsible for BP Trinidad's multi-TCFG Red Mango discovery. She has worked as an exploration geologist worldwide in Norway, West Africa, the Middle East, Alaska, California and the Rockies. Her talk on Boquerón Field in Venezuela was featured in the "Best Case Histories" session at the 2005 SEG convention in Houston. At BP she mentors less experienced geoscientists and serves on BP's global recruiting team.

Ms. Farmer received a BS in geological engineering and an MS in geology both from Colorado School of Mines. She was honored by CSM as "Most Outstanding Geology Graduate" in 1979. She is a licensed geologist in the state of Texas.

Remembrance

William C. Bishop

William C. Bishop, 67, of Missouri City, Texas, passed away on Saturday, June 2, 2007. He was born in New York City. Bill received his masters in science from Michigan State University and pursued his career as a geologist doing what he enjoyed most. He had a great love of the outdoors and traveling. "Wild Bill" will be remembered for his keen sense of humor and will be deeply missed by all who knew him. Memorial contributions may be made in Bill's honor to the American Heart Association, 7272 Greenville Ave., Dallas, TX 75231-4596.

Remembrances *continued on page 47*

September 2007

Sunday	Monday	Tuesday	Wednesday
	Reservations: The HGS prefers that you make your reservations on-line through the HGS website at www.hgs.org. If you have no Internet access, you can e-mail reservations@hgs.org, or call the office at 713-463-9476. **Reservations for HGS meetings must be made or cancelled by the date shown on the HGS Website calendar, normally that is 24 hours before hand or on the last business day before the event**. If you make your reservation on the Website or by email, an email confirmation will be sent to you. If you do not receive a confirmation, check with the Webmaster@hgs.org. Once the meals are ordered and name tags and lists are prepared, no more reservations can be added even if they are sent. **No shows will be billed.**		**Members Pre-registered Prices:** General Dinner Meeting . . . . . .$28 Nonmembers walk-ups. . . . . $35 Env. & Eng. . . . . .$25 Luncheon Meeting . . . . . .$30 Nonmembers walk-ups. . . . . $35 International Explorationists . . . . . .$28 North American Expl. . . . . .$28 Emerging Technology $25
2	3	4	5
9 **AAPG Mid-Continent Meeting** *Wichtia, Kansas* **HGS/PESGB Africa Conference** *Cape Town, South Africa*	10 **HGS General & North American Explorationists Joint Dinner** *by James Markello, "The Carbonate Analogs Through Time (CATT) Hypothesis—A Systematic and Predictive Look at Phanerozoic Carbonate Reservoirs"* Page 15	11	12 **SIPES Continuing Education Seminar** **GSH Technical Breakfast** *by Don Caldwell, "Reservoir Characterization Below Seismic Resolution"*
16	17 **HGS Golf Tournament** Page 16 **HGS International Dinner** *by Robin Hamilton, "Identifying New Hydrocarbon Plays—The Challenge and an Approach"* Page 21	18 **HGS Northsiders Luncheon** *by Ted Lukas, "Thinly-Bedded Deepwater Channel Complexes, Zafiro Field, Equatorial Guinea"* Page 23 **HGS Environmental & Engineering Dinner** *by Darren DeFabo and Ed Dolan, "Horizontal Well Remediation"* Page 24	19 **GSH Tennis Tournament**
23 **77th Annual SEG Convention** *San Antonio* 30	24	25 **12th Annual Gulf Coast Prospect Expo** *Lafayette, Louisiana*	26 **HGS General Luncheon** *by Cathy Farmer, "Structural and Sedimentological Evolution of the Ultra-Deep Gas Play Fairway—Gulf of Mexico Shelf, Texas and Louisiana"* Page 31


GeoEvents

Thursday	Friday	Saturday
	NOW you can make your reservations on-line at www.hgs.org	1
6	7 Geoscience Day @ BEG	8
13	14	15
20 **SIPES Luncheon Meeting** *by Jason Robinson, "Using ElectroMagnetics for Onshore Hydrocarbon Detection and Delineation—A Case Study from Trinidad"* Page 29 **NeoGeos Happy Hour**	21 **54th Annual HGMS Gem, Jewelry, Mineral and Fossil Show** *Humble Civic Center* Page 54	22
27	28	29

Upcoming GeoEvents

Monday & Tuesday, October 1–2
AGC Conference: Gulf Region Mudstones as Unconventional Reservoirs, *page 8*

Monday, October 8
HGS General Dinner
New Exploration Plays in the GOM
Jon Blickwede

October 13–20
Earth Science Week

October 17–20
Association for the Study of Peak Oil & Gas (ASPO) 2007 Houston World Oil Conference

October 21–23
GCAGS Convention, Corpus Christi

Tuesday, October 23
HGS Northsiders Lunch
HGS Environmental & Engineering Dinner
Speakers TBA

Thursday, October 25
NeoGeos Happy Hour

Monday, October 29
HGS International & North American Explorationists Joint Dinner
Wilcox papers by David Rains & Tom Mooney

Wednesday, October 31
HGS General Lunch
Tentative: Earth Climate Change - Facts & Implications
Dr. A.W. Droxler

A Rock that's (from) "Out of this World"

by ***Charles A. Sternbach***

Of all the meteorites found on earth today, less than 50 pounds and about 50 separate finds are believed to be of lunar origin. Remembering some good advice, "Speak to the Earth and it will teach thee" (Job 12:8), one can only marvel at how modern techniques enable geologists today to hear what some rocks have to say!

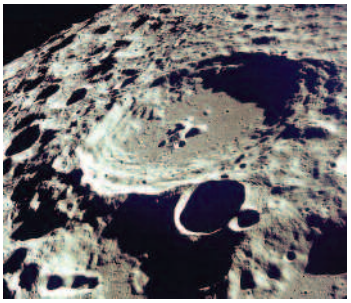


Figure 1. A view of the lunar far side, the inferred original home of NWA 482, as seen from Apollo 11.

A captivating story surrounds rock "NWA 482." It is a 1.0-kg specimen known as a "lunaite." Numerous scientific papers document this particular find and the fascinating methodology that tells of an amazing journey.

The meteorite consists of 80%–90% by volume plagioclase, and the plagioclase averages An96.3. As an anorthosite, this rock is already somewhat uncommon. But that's just the beginning. The age of the host rock is estimated to be 4.5 BYBP, using K/Ar dating techniques. Wow! That's about as old as the solar system itself. Such rocks are unknown on earth today. NWA 482 is comparable to lunar samples brought back by Apollo 15. NWA 482 has been compared to the Genesis Rock returned by that mission because of the high concentration of anorthosite contained in the meteorite. It is believed that NWA 482 may have originated on the heavily cratered lunar "far side" (figure 1).

Dating the recrystallization of healed fracture veins reveals that two episodes of trauma occurred at 3.72 and 2.4 BYBP. It is inferred that the later date, 2.4 BYBP, coincides with a meteorite impact on the lunar far side that blasted this specimen into space where it floated for about 2.4 By.

Figure 2. The meteorite as it was found, showing a distinctive dark brown "fusion crust."

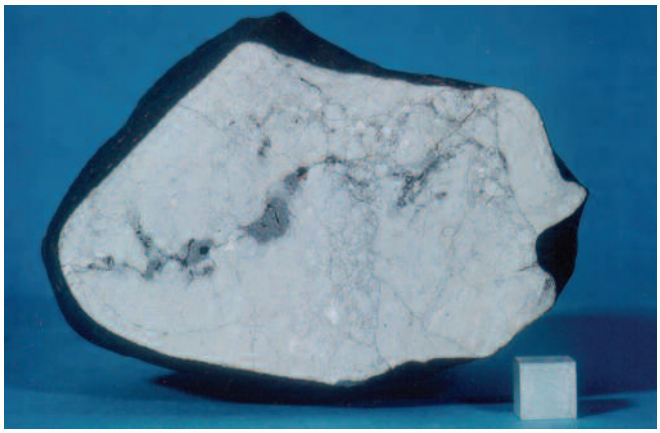


Figure 3. Cutaway view showing the thin fusion crust and a light gray and fractured anorthosite host rock.

The rock has a distinctive brown "fusion crust" (figure 2) in contrast to the light gray anorthositic rock in cutaway view (figure 3). A close up shows healed fractures, scars of an impact that sent the rock on its amazing journey (figure 4). The fusion crust formed by high temperatures and material ablation as this rock from space burned through earth's atmosphere. The age of this crust, about 8,600 ybp (C-14 carbon dating), indicates that this rock is a fairly recent arrival to our world.

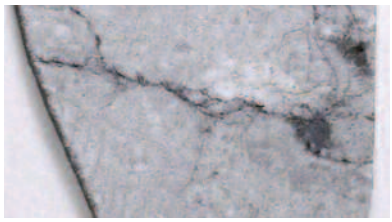


Figure 4. This close up of the cutaway rock is the actual sample studied by the author, originating probably from the far left side of figure 3.

This relatively pristine and unweathered sample was found in Northwest Africa, probably in 2000. The dark brown crust stood out against the background of the white sands of the west Sahara desert. (Not surprisingly, meteorites are also commonly found on snowy white Antarctica.)

This sample was not found by the author. The lucky finder sold it to a collector in 2001. The collector then sent specimens to numerous labs for verification, study and analysis. Only small pieces have been offered subsequently to private collectors.

To a geologist, all rocks tell an interesting story. NWA 482 is no exception. ■

For additional information, the reader is referred to the following paper: Dauber, I.J., Kring, D.A., Swindle, T. D., and Jull, A.J.T., 2002, Northwest Africa 482: A crystalline impact-melt breccia from the lunar highlands, Meteorites and Planetary Science 37, pp. 1797–1813.

Guest Night 2007: "Amazing Fossils from the Permian of Texas—New Insights and Ideas on Reptiles and Dinosaurs"

Solving a 287 Ma Crime Scene

by ***Bonnie Milne-Andrews***

The Houston Geological Society Guest Night on June 16, 2007, was the scene of an entertaining and thought-provoking talk by Dr. Robert Bakker, the newly appointed Curator of Vertebrate Paleontology of the Houston Museum of Natural Science. To an overflow audience in the IMAX theater, Dr. Bakker delivered a comical yet compelling story of the fascinating reptiles and dinosaurs that populate the fossil record of the redbeds of the Texas Permian.

Bill Osten looks on as Dr. Bakker holds up a shark tooth

Bedecked in a large cowboy hat, calling upon the likes of Kinky Friedman and songster Bob Dylan, the energetic New Jersey-born Dr. Bakker squelched any impression of the bland and introverted scientist. His entertaining and at times stream-of-consciousness style is an outgrowth of his unbridled enthusiasm for the study of dinosaurs. Dr. Bakker, educated at Yale and Harvard universities, began his career teaching at Johns Hopkins University in Baltimore, Maryland. He has conducted field studies around the world and has spent over 30 years excavating Wyoming's Como Bluff site.

Dr. Bakker focused his HGS Guest Night talk on research conducted in a field school for Texas teachers and volunteers at the Craddock Ranch near Seymour, Texas. He is best known for the theory that some dinosaurs were truly warm-blooded, high-metabolism, high-energy creatures. Through his studies he has pursued the subject of dinosaur habitats and served as a technical advisor for the film "Jurassic Park" and the 1992 PBS series, "The Dinosaurs." Dr. Bakker is the author of numerous books, including *The Dinosaur Heresies*. In addition to being a scientist, Bakker is also a Pentecostal preacher who is a strong proponent of theistic evolution.

Charles Sternback, Steve Earle and Dr. Bakker in front of the exhibit that inspired the June Bulletin *cover*

Dr. Bakker began his talk with "Dinosaurs—that did it for me" as he recounted his visit as a boy to the American Museum of Natural History in New York City to view the fossil remains of dinosaurs. He discussed interesting finds in his field program held in Seymour, Texas, which he described as rock-based paleonotology where we "dig fossils with a CSI approach." Focusing on how the animals died, he emphasized the secrets revealed when you listen to "the rocks talk."

Displaying his large drawings of reconstructed reptiles and dinosaurs of the Permian of Texas, Dr Bakker discussed the fascinating life habits of Dimetrodon and the development of and purpose for "fins" in the Permian. Then he discussed the anatomy of another Permian reptile, Zachytrachys, with a larger-than-life

HGS Guest Night *continued on page 41*

HGS Guest Night continued from page 39

and very "visual" explanation of its ability to snare prey through the employment of a mucuous slime net.

Through the excavation of Permian floodplain and overbank deposits at the Craddock Ranch site, Dr. Bakker and his volunteers have identified 20,000 to 30,000 Dimetrodon skeletal remains. Citing the fact that Texas has produced more Permian finback fossils than anywhere else on earth, he comically suggested that Seymour High School should rename their football team the "Fighting Finbacks."

Likening his work to the study of ballistics in solving crime cases, Dr. Bakker related the development of his theory about the diet of Dimetrodon. Although the animal was a top predator, the association of Dimetrodon teeth with herbivores is scant. Dr. Bakker has developed a compelling story based upon the relationship of Dimetrodon teeth found in association with the ancient shark species, Xenocanth, as well as the smoking gun of mineralized shark cartilage in Dimetrodon coprolites.

Through the careful reconstruction of the events represented by the fossil finds and their critical associations, Dr. Bakker pronounced that the perpetrator and victim of a 287 million year old murder mystery has finally been solved.

Four hundred people at Guest Night enjoyed a delicious dinner and drinks and were able to wander the museum to view the fossils, minerals and oil and gas exhibits. Additionally, members of the Houston Geological Society showed dinosaur casts, fossils and teaching exhibits related to the ongoing North Texas dinosaur fossil digs.

During the Guest Night program in the IMAX theater, outgoing HGS President Steve Brachman awarded plaques to students who won prizes for their exhibits at the 2007 Houston Science and Engineering Fair. These students were recognized in the May 2007 issue of the HGS *Bulletin*; they and their parents were thrilled to be invited to Guest Night and participate in the program.

Dr. Bakker signs one of his dinosaur drawings

Following Dr. Bakker's fascinating lecture, the program concluded with a sneak preview of the 3-D IMAX movie, "Dinosaurs Alive."

Student award recipients

The Guest Night committee continues to improve its program every year, making it one of HGS's top sell-out programs. Key corporate sponsors such as BHP Billiton, TGS-NOPEC, Schlumberger, Subsurface Consultants and Associates (SCA) and BP have made the program possible with their highly appreciated financial support.

Special thanks also goes to the hard-working Guest Night committee chaired by Bill Osten. Without Bill's expert leadership, the success of the evening would not have been possible.

The Guest Night program was recorded digitally and can be downloaded as a Windows media streaming video file from the HGS website at http://www.hgs.org/en/art/?1214.

Reaching out to Students, Scouts, Teachers and Everyone Else

*by **Janet Combes***

The fall is always an active time for geoscience outreach activities and this year is no exception.

The first event is the **Houston Gem and Mineral Show** on September 21–23. The HGS outreach booth promoting geoscience careers is an important part of the exhibits for the thousands of kids on school field trips on Friday and for hundreds of Scouts on Saturday and Sunday. The Houston Bureau of Economic Geology Center usually has some core laid out at the booth. The booth needs to be staffed full time for all 3 days. Please consider volunteering an hour or two and ask others who might be interested. Contact Martha McRae (mmcrae1@houston.rr.com) or Janet Combes (jmcombes@msn.com). Information on the show is at http://www.hgms.org/show.html.

The BIG fall event is **Earth Science Week** that starts on Saturday October 13 with the Family Energy Festival at the Houston Museum of Natural Science and ends with a public field trip on Saturday October 20. The Museum Day has a series of demo tables set up through the Energy, Paleo and Mineral halls. Visitors visit each area and get a "passport" stamped in order to win a prize. This event is frequently tied in with a Scout Geology badge program. The field trip is open to the public and in the past has gone to Whiskey Bridge for fossils, Galveston for beach geology and the Blue Lagoon for Tertiary fluvial rocks. Multiple geoscience organizations in the Houston area participate in these activities. If you've done it before, you know how much fun it is and how many people come; if you haven't been there, come help and find out! Audrey Reznik is the new ESW chair this year; you can contact her at reznik@uniserve.com. Martha McRae will continue as co-chair.

Alison Henning has been the Academic Liaison for the HGS for several years. She has just started her term as a Director on the HGS Board and since she can't do two HGS jobs and her own, she needs to find a replacement. Anyone who has an interest in serving as the HGS Academic Liaison, or knows someone who might be, please contact Alison at alison_henning@yahoo.com.

As many of you know, the Texas State Board of Education (SBOE) has authorized Earth Science as an elective course for a required fourth year of high school science starting in the 2010–2011 school year. The HGS and other Houston area geoscience organizations, along with the Texas Earth Science Teachers Association and the BEG, have been working together to prepare to offer our assistance. Three HGS members submitted formal applications this spring to serve on the SBOE curriculum committee for the senior level Earth Science course. At a July 2007 SBOE meeting, the Texas Education Agency staff was given guidance to proceed with the work of assembling the committees. Upon approval from the SBOE chair, committee members will be notified of their selection. The curriculum committee should begin actively working in September 2007with the TEKS requirements for the new curriculum submitted to the SBOE for adoption in November 2008. The SBOE expects professional development for teachers to formally start in 2009. The HGS plans to start coming up with possible courses and field trips that we can offer to the teachers before then in order to be well prepared. Serious planning on how the HGS can help the curriculum committee members has begun and plans for assisting the teachers will start up soon. We welcome new participants and new ideas! Contact Janet Combes at jmcombes@msn.com. ■

Northsiders Meeting *continued from page 23*

modeling. His experience includes deep water West Africa, South America, the former CIS, North Africa, China and Australia. Domestic experience includes the North Slope, Western Interior basins, shallow-water GOM, Morrow Shelf, Anadarko and Ardmore Basins. Since 2004 he has been working at Devon Energy International on the Zafiro Field and other projects in offshore West Africa.

Dr. Schwans has over 20 years of major oil company experience, including 9 years with Exxon Production Research Company in the Clastic Facies and Depositional Systems Group, 4 years with Exxon Exploration Company in the Critical Technology Division and 5 years with Wintershall AG-BASF Group in New Business Development and as Technology Manager. Prior to joining Exxon he worked 2 years as a geological consultant in Europe and Canada. He received his BS in geology-paleontology at the University of Munich (1977), his MS in geology-hydrology from the University of Kiel (1981) and his PhD in sedimentology and stratigraphy from Ohio State University in 1988.

6th PESGB/HGS International Conference on African E & P
Africa's Petroleum Systems: From Outcrop to Deepwater

Tuesday 11th and Wednesday 12th September 2007
Cape Town Convention Centre, South Africa

by ***Al Danforth***

This annual Conference on African Geology has become a landmark event. Since 2002 the Petroleum Exploration Society of Great Britain (PESGB) and the International Group of the Houston Geological Society have collaborated on assembling geoscientists working Africa to share ideas and information on petroleum geology of the continent. The location of the two-day conference has alternated between London and Houston until this year, when the PESGB was able to organize the event in Africa with the idea of more readily gaining input from Africa geoscientists. The Cape Town conference is sponsored and co-organized by PetroSA and supported by the Petroleum Agency of South Africa and Geological Society of South Africa.

Two days of talks and poster sessions will include ground-breaking presentations on all aspects of exploration and production geoscience in onshore and offshore Africa. The conference is complemented by two field trips and a full screening of Seb Lüning's film "Petroleum Geology of Southern Libya."

Tuesday and Wednesday, 11 and 12 September

Talks include current activity and plays all around Africa and an excellent session on African Tectonics & Sediments Systems:

- **Plate Tectonic Evolution of the Circum-African Margins**
- **The Santonian Event:** New Insights from North and South Africa
- **The Evolution of the African Landscape during the Mesozoic and Cenozoic:** Integrating High-Resolution Palaeogeography, Drainage Analysis and Landscape Dynamics
- **The Turbiditic Systems:** Records of the Uplift History of Africa during the Meso-Cenozoic
- **Climate and Tectonics:** Interactive Controls on Africa's Cenozoic Sedimentary History
- **Regional and Local Controls on the Architecture of Cenozoic Turbiditic Systems of the Lower Congo Fan**
- **3D View of Structure at a Plate Scale:** Significance for Understanding the Palaeozoic Petroleum Systems of North Africa

Poster sessions and core workshop of South African Cores, displayed by the Petroleum Agency SA

Thursday, 13 September

- AM: Full screening (~2? hours) of Seb Lüning's film on "Petroleum Geology of Southern Libya"
- **Cape Peninsula Trip:** A full-day tour of the beautiful Cape Peninsula including magnificent beaches, breathtaking views, and historic and picturesque coastal villages
- **Tanqua Karoo Deepwater Facies Field Trip** (Wednesday afternoon–Saturday): Visit one of the world's best examples of an ancient basin floor fan to slope fan complex associated with a fluvial-dominated deltaic system. Outcrops of the Permian Ecca Group strata in the southwestern Karoo Basin (Tanqua subbasin) are tectonically almost undeformed, outstandingly well-exposed and easily accessible. The Cape Fold Belt–related Karoo foreland basin hosts an inexhaustible amount of information on fine-grained deep-water and deltaic sedimentation with present-day erosion allowing 3D viewing of laterally continuous (tens of kilometers) outcrops. Trip is led by De Ville Wickens and stays in Inverdoon Game Park.

See full details and REGISTER on-line at the PESGB website (use link to the PESGB website from www.hgs.org Event Calendar).

2007 GCAGS / GCSSEPM
Annual Convention

Gulf Coast Association of Geological Societies
Gulf Coast Section of the SEPM
Corpus Christi Geological Society

Corpus Christi, Texas
October 21-23, 2007

With our presence on the sparkling Gulf Coast of Texas, the Corpus Christi Geological Society has set the theme of the 57th annual convention as

"EXPLORING THE THIRD COAST"

Better product pricing has sparked a tremendous growth in our industry. We anticipate papers that will reflect aspects of today's exploration and exploitation and will stand as a legacy to those just entering our profession.

CONVENTION HIGHLIGHTS

- Over 100 Oral & Poster Presentations
- 2 Field Trips & 6 Continuing Education Courses
- Global Climate Change Forum
- Co-location for Gulf Coast Prospect Expo

Online Registration Now Available
www.gcags2007.com

An Incident at the Welkom Hotel, Welkom, Orange Free State, South Africa

by ***George Devries Klein***

During 1976, I accepted an invitation to deliver a keynote talk on "Tidalites" at the annual symposium of the Sedimentology Division, South African Geological Society. After negotiating airfare, hotels, meals and per diem, I agreed to go, but in exchange, I taught short courses at Soekor, The South African Chamber of Mines and two universities, delivered one-hour lectures at local geological societies and other universities, and agreed to share a modest amount of my experience to paleo-placer gold mining operations, including trips to over 5000 feet below sea level to examine rock faces.

At about the half-way point, I was driven to the community of Welkom (population 25,000 people) in the heart of the Orange Free State, which is populated mostly by Afrikaners (of Dutch descent). Having been born in The Netherlands, I was interested in seeing some local "Dutch" culture.

My host checked me into the Welkom Hotel where I was scheduled to give a talk to the local geological society (which had a dinner meeting format like HGS) that evening. My room was on the third floor and at the scheduled time, I left and took the elevator to the ground floor. The elevator stopped on the second floor and an Afrikaner couple joined me.

As the elevator started, the couple started talking in Dutch about the American and made pointed comments about my color-coordinated shirt and tie. I said nothing.

the couple started talking in Dutch about the American and made pointed comments about my color-coordinated shirt and tie. I said nothing.

When the elevator reached the ground floor, we got off. They turned to the right, and I turned to the left to go to the dining room. After two steps, I spun around and said to them, "Tot Ziens," which in Dutch means "So long," or in the current vernacular "Have a nice day."

The couple stopped in their tracks, turned around and in accented English asked if I spoke Dutch. They looked a trifle shocked and embarrassed. I replied in poor Dutch that I'm an American citizen but was born in The Netherlands and left as a child.

My parting comment to them in English was that "You need to be a little careful what you say about people from other countries. Maybe, just maybe, they know enough of your language, and they may not accept such comments kindly." ■

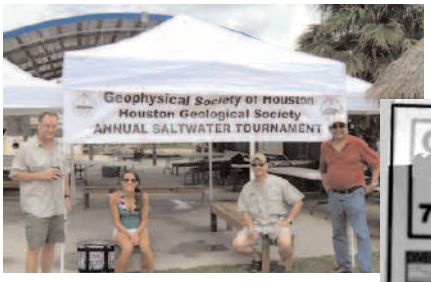
Remembrance

Bevian St. Martin

Bevian St. Martin, loving husband, father, grandfather and great-grandfather, passed away Monday, June 11 in Austin, Texas. In 1941 he enlisted in the U.S. Marine Corps, serving as a sergeant in World War II and stationed for nearly two years in the South Pacific Samoan Islands. Following his military service, he moved to Galveston, Texas. It was there that he met his wife, Helen Dittert, while she was attending nursing school. They married in 1948. He entered college at this time, attending the University of Colorado and graduated from the University of Houston with a degree in petroleum geology. His career began with Shell Oil Co. in Houston and Corpus Christi, Texas, where he worked for 13 years. After leaving Shell, he worked as a consulting geologist specializing in the South Texas Gulf Coast area. He was a member of the American Association of Petroleum Geologists for over 50 years, the Houston Geological Society and the Society of Independent Petroleum Geologists. In lieu of flowers, memorial contributions may be made in honor of Bevian to your charity of choice or the Westlake Hills Presbyterian Church, 7127 Bee Caves Road, Austin, TX 78746.

Remembrances *continued on page 60*

7th ANNUAL GSH/HGS SALTWATER FISHING TOURNAMENT



vrroooom!!

HGS Annual Road Rally

The Annual HGS Road Rally is Coming

A team or individual is given a packet with clues directing you to travel by car to secret cultural, historical, and geological sites in and around Houston. The team that answers the most questions based on the sites/clues and does it in the least mileage wins a trophy.

Coffee and donuts are included. The course takes 3 to 4 hours to complete and ends in a social event where trophies are awarded (meal/drinks not included).

WHEN??

Saturday November 10, 2007 at 9:00 AM

HOW??

Registration forms and more information will be available in the next *Bulletin* and on the HGS website (www.hgs.org).

Sponsored by HGS Field Trip Committee

If you want information please contact Diane Yeager dyeager@enercon.com or 713-941-0401.

vrroooom!!

24th Annual HGS Skeet Shoot—June 16, 2007

by ***Tom McCarroll, 2006-2007 Skeet Shoot Chairman***

On Saturday, June 16, 102 shooters participated in the HGS's 24th Annual Skeet Shoot at the Greater Houston Gun Club in Missouri City. Although the weather was threatening, with rain at the gun club early in the morning, we were able to shoot all four rotations before the skies opened up. As usual, the BBQ lunch provided by Diversified Well Logging was delicious! In addition to the 50 skeet targets on the program, there was a two-man flurry game that was an absolute riot—imagine two shooters trying to break 30 targets in about a minute! We'll do that again next year, for sure.

There were no losers, but the winners and their scores were:
High Overall Champ: Keith Trant, with a score of 49 (he shot a 49 last year, too, for 2nd)
High Overall Runner-up: Barry Boyce, 49
AA Class Champ: Tom McCarroll, 48
AA Class Runner-up: John Walker, 48
A Class Champ: Bruce Batory, 42
A Class Runner-up: Gary Martens, 42
B Class Champ: Bob Lestage, 34
B Class Runner-up: Mike Vennes, 34
C Class Champ: Bob Gauer, 27
C Class Runner-up: Don Cook, 27

Richard Gartner was our big door prize winner this year, taking home a beautiful Panama straw cowboy hat generously donated by Tim McGinty of ATP Oil and Gas, in memory of John Warner. Steve Cryer won a $250 gift certificate from Academy Sporting Goods donated by Kenny Baucum, Jr., of The Mudlogging Company. John Crawford of Schlumberger donated three gift certificates: Louis Piercy and Ben Pearson won $200 each, and Mark Brethauer won $100. Preston Croft, Tim Kiefer and Carlos Maggio each won $500 gift certificates. Carlos is making a habit of this; he won a $500 certificate last year, too. Barry Boyce, Gary Dobbs, David Grellman, Bill Hubbard, Nick Lanza, Merrick Mainster, Tom McCarroll, Frank Senz, Van Veenstra and Jason Wilson each took home $200 certificates. Marsha Adams, Bruce Batory, John Crawford, Doug Mitchell, Paul Muncy, Jim Pol, Wayne Sandefur, Ken Sands and Clifford Sellers each won $100 gift certificates. We also raffled off our excess shells; Mike Bievenour, Greg Brannon, Don Cook, Mike Globe, Jeff Gebhart, Michael Hosick, Sukhie Hyare and Tim McGinty all took home cases of shotgun shells.

The two-man flurry was won by Tim McGinty, Pat Love and James Wells. Because Tim shot twice and both of his teams scored identical 28s, we declared a tie and gave $100 certificates to the three top shooters.

Without the support provided by our sponsors, our shoot would not include food, beverages and door prizes for such a low price. We gratefully acknowledge the contributions, financial and otherwise, of our sponsors: Diversified Well Logging, Ameritex Minerals, Inc., PGS Geophysical, Schlumberger, Seitel Data, ATP Oil and Gas, Geokinetics, Apex Oil & Gas, Baker Hughes, Claymore Oil & Gas, Petrolog, Mariner Energy, Sanchez Oil & Gas, Exploration Data Services, Seismic Exchange, The Mudlogging Company, Cheyenne Petroleum and Patriot Exploration.

The Skeet Shoot Committee also thanks all the shooters who came out to support this year's event. Be sure to come out next year—look for the ad in the HGS *Bulletin*!

2006–2007 President's Night









Government Update

*by **Henry M. Wise, P.G.** and **Arlin Howles, P.G.***

Legislation Update

The following is legislation passed this year by the Texas Legislature that may be of interest to geologists:

H.B. No. 3: Authored by Puente, relating to the management of the water resources of the state, including the protection of instream flows and freshwater inflows. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=HB3.

S.B. No. 662, companion bill **H.B. No. 1313:** Authored by Wentworth, relating to transmittal to the Texas Water Development Board and a local groundwater conservation district of certain information by a person applying to subdivide a tract of land. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=SB662.

H.B. No. 4: Authored by Puente, relating to water conservation. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=HB4.

S.B. 404, companion bill **H.B. 1020:** Authored by Zaffirin, relating to the Bee Groundwater Conservation District. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=SB404.

S.B. 1604: Authored by Duncan, relating to responsibilities of certain state agencies concerning radioactive substances and imposing fees and surcharges providing administrative and civil penalties. Area permits for ISL are to be issued by the Texas Commission on Environmental Quality (TCEQ), waste permits by the Texas Department of Health (TDH). Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=SB1604.

H.B. 2018: Authored by Duell, relating to eligibility for a municipal setting designation related to potential impacts to groundwater quality of solid waste activities. Removes the minimum population requirement for an MSD. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=HB2018.

H.B. 3220: Authored by Elkins, relating to the environmental regulation and remediation of dry cleaning facilities. Allows more sites to participate in the program. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=HB3220.

H.B. 3554, companion bill **S.B. 1692:** Authored by Carl Isett, relating to the program for the regulation and remediation of underground and above ground storage tanks. Extends the life of the LPST Remediation Fund to September 1, 2011. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/History.aspx?LegSess=80R&Bill=HB3554.

H.B. 3837: Authored by Gonzalez Toureilles, elating to regulation by the Railroad Commission of injection wells used for in situ uranium mining. Need RRC permit for ISL uranium exploration holes and wells until production area permit approved by TCEQ. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/history.aspx?LegSess=80R&Bill=HB3837.

H.B. 3838: Authored by Gonzalez Toureilles, Hardcastle and Chisum, relating to regulation of injection wells used for in situ uranium recovery by the TCEQ. Signed by the governor, effective immediately. For more information go to http://www.capitol.state.tx.us/BillLookup/history.aspx?LegSess=80R&Bill=HB38378 .

Major changes resulting from these bills will be:

- MSDs can be established in any sized incorporated municipality. The minimum population requirement has been deleted.
- LPST Remediation Fund will be extended an additional four years.
- Risk-based Corrective Action will be used at all LPST sites, rather than rules. It remains to be seen if this will result in a total reuse of the old RBCA rules, continued use of the TRRP rules, or something in between. I haven't yet gotten a commitment from anyone at the TCEQ and believe that they are waiting for the governor's signature before committing in any direction.
- Uranium exploration will be controlled by the Railroad Commission, Production via in situ recovery (ISR) will be controlled by the TCEQ, and radioactive wastes with be controlled by the TDH.

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Paleontological Resources Preservation Act Considered

Government Update *continued on page 57*

Government Update continued from page 55

In a hearing held April 17, 2007, the House Natural Resources Subcommittee on National Parks, Forests and Public Lands held a hearing to consider the Paleontological Resources Preservation Act and three other measures. Introduced by Representative James McGovern (D-MA), the Paleontological Resources Preservation Act (H.R. 554) provides for the protection of paleontological resources on federal lands by providing stiff penalties for crimes involving the theft and vandalism of Fossils of National Significance (FONS). In his opening statement, Ranking Member Raúl Grijalva (R-AZ) noted his concern about the "unintended consequences" of H.R. 554. However, Congressman McGovern assured the committee that the bill "does not place any new restrictions on amateur collectors" and only pertains to public lands.

Recalling the "Last Chance" Dinosaur Quarry in Colorado, discovered by a volunteer enthusiast in 2004 and regarded as one of the most important dinosaur quarries in Colorado, the US Forest Service embraced the bill, albeit with minor revisions. Commenting that fossils provide "remarkable evidence of the Earth's history," Mr. Norbury, Assistant Deputy Chief of the US Forest Service, noted that "the establishment of a comprehensive legal framework that encourages the integration of public and private resources, skills, and enthusiasm" would play an enormous role in "the excavation and preservation of these amazing remains."

To see the full testimony, go to http://resourcescommittee.house.gov/hearings/hearingdetail.aspx?NewsID=51. The full text of the bill is available from Thomas at http://www.thomas.gov/cgi-bin/bdquery/z?d110:h.r.00554:

Americans and British Plan Lunar Exploration Together

NASA Administrator Dr. Michael Griffin and British Space and Innovation Minister Malcolm Wicks signed a historic agreement on April 19, 2007, to consider approaches to future collaborations on space missions, particularly lunar exploration.

British expertise in small satellite and robotic technologies could play a significant role in achieving NASA's goal to establish a scientific research outpost on the Moon. Professor Keith Mason, CEO of the Science and Technology Facilities Council and Chairman of the UK Space Board commented to the British National Space Centre, "This latest agreement with NASA… means the UK is fully exploiting and strategically maximizing its technological and scientific strengths in space exploration."

United Nations Security Council Debates Threats of Global Warming

Concern that warming global temperatures will gradually shrink land and water resources and irreversibly alter the face of the planet prompted the first-ever debate on the topic by the United Nations Security Council on Tuesday, April 17, 2007. Representatives from over fifty countries convened in New York to discuss the security implications of global climate change, including food and water shortages, the displacement or migration of large populations, and new wars. The meeting received mixed responses.

China's deputy ambassador Liu Zhengmin rejected the meeting, arguing that the UN Security Council is the wrong forum to debate global warming. "The developing countries believe that the Security Council has neither the professional competence in handling climate change, nor is the right decision-making place for extensive participation leading up to widely acceptable proposals," he was quoted as saying in the New York Times.

The British foreign secretary, Margaret Beckett, disagreed. An unstable climate will exacerbate some of the core drivers of conflict, such as migratory pressure and competition for resources," she said. As the UN body responsible for maintaining international peace and security, the Security Council must consider the potential for conflicts arising from global warming. Qatar's UN ambassador, Nassir Al-Nasser, agreed, saying, "Since we all run the risk of being submerged, we must work collectively to save ourselves from drowning."

Council on Foreign Relations Report Reveals Dim Future for Nuclear Power

Earlier this month the Council on Foreign Relations published "Nuclear Energy: Balancing Benefits and Risks" in partnership with Washington and Lee University. Written by the Council's Fellow for Science and Technology, Dr. Charles D. Ferguson, the report is a sobering analysis of the "nuclear renaissance" currently touted by policy makers on Capitol Hill.

Although currently in favor among politicians as a clean source of energy, nuclear power is unlikely to play a major role in augmenting America's energy security and reducing its greenhouse gas emissions. In the report, Dr. Ferguson argues that the rapid nuclear expansion needed to even moderately reduce emissions would "pose serious concerns for how the industry would ensure an adequate supply of reasonably priced reactor-grade construction materials, well-trained technicians, and rigorous safety and security measures."

Also sobering is the fact that of the 103 operating nuclear reactors in the U.S., almost all face retirement by mid-century, even with 20-year life extensions to their original 30-year lifetimes. According to the report, replacement of existing facilities would require building a new reactor every four or five months over the next 40 years. **Government Update** *continued on page 59*

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The biggest challenge America faces in regard to nuclear power is overcoming a decades-long fear of nuclear energy. Primarily due to the dual horrors of the Three Mile Island accident in 1979 and the Chernobyl accident seven years later, America's nuclear program has been mothballed for the past thirty years. Finding the expertise and infrastructure necessary to replace aging reactors and construct new ones presents a daunting challenge. "For this reason alone," Dr. Ferguson argues, "nuclear energy is not a major part of the solution to U.S. energy insecurity for at least the next fifty years."

The report is available at http://www.cfr.org/content/publications/attachments/NuclearEnergyCSR28.pdf.

Key Federal Register Notices

DOI—The Minerals Management Service announces a final rule requiring lessees of federal oil and gas leases in the Outer Continental Shelf (OCS) to provide information on how they will conduct their proposed activities in a manner consistent with provisions of the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). It identifies environmental, monitoring and mitigation information that lessees must submit with plans for exploration and development and production. This regulation is effective as of May 14, 2007. For further information, contact Judy Wilson, Chief, Environmental Compliance Unit, Environmental Division, (703) 787-1075. [*Federal Register*: April 13, 2007 (Volume 72, Number 71)]

NASA—The National Aeronautics and Space Administration announces its Centennial Challenges' Lunar Lander Challenge. The Lunar Lander Challenge is now scheduled and teams that wish to compete may now register. The NASA Centennial Challenges Program is a program of prize contests to stimulate innovation and competition in space exploration and ongoing NASA mission areas. The Lunar Lander Challenge is a prize contest designed to accelerate technology developments supporting the commercial creation of a vehicle capable of ferrying cargo or humans back and forth between lunar orbit and the lunar surface. The Lunar Lander Challenge is being administered for NASA by the X PRIZE Foundation (http://www.xprize.org). The Centennial Challenges Web site is http://www.centennialchallenges.nasa.gov. For further information, contact Kenneth Davidian, Program Manager, Suite 2S24, Centennial Challenges Program, Innovative Partnerships Program Office, NASA, 20546-0001, (202) 358-1160, kdavidian@nasa.gov. [*Federal Register*: April 17, 2007 (Volume 72, Number 73)]

AGI Government Affairs Monthly Review (May 2007)

Advanced Research for Energy Bill Advances in the House

On May 10, 2007, the Subcommittee on Energy and Environment of the House Science and Technology Committee approved bill H.R. 364. The bill would create an Advanced Research Projects Agency for Energy (ARPA-E). The agency will be given the task of reducing the U.S. dependence on foreign oil through new clean renewable energy technologies. The goal is to reduce foreign oil use by 20% in the next 10 years. The bill also promises to have a "flat and nimble" organization, to avoid problems and delays caused by bureaucracy.

Section III of the bill creates the Energy Independence Acceleration Fund that would provide the financial resources necessary for this undertaking. It starts off at $300 million at the beginning of fiscal year 2008 and increases by 25% until 2013, finally capping off at $915 million. While the committee has placed the bill on the House calendar of business, its ultimate fate is yet to be determined by the majority party leadership. The Senate also has a companion bill called America COMPETES, which includes a section on creating an ARPA-E. This bill is much broader and encompasses funding for many other things, including NSF and Office of Science at the Department of Energy. The House has recently passed an omnibus bill that is similar to the Senate bill except that the House bill does not include ARPA-E. The conference committee will need to decide what to do about the ARPA-E proposal.

The link to the Science and Technology Committee's homepage can be found at http://science.house.gov/legislation/leg_highlights_detail.aspx?NewsID=1235.

Mining Law Reform Introduced on Measure's 135th Birthday

The Chairman of the House Natural Resources Committee, Nick Rahall (D-WV), introduced a broad package of reforms to the 1872 Mining Law on May 11, 2007. The Hardrock Mining and Reclamation Act of 2007 (H.R. 2262) would eliminate patents and impose an 8 percent net smelter return royalty on hard-rock minerals, identify federal lands that would not be open to mining, establish environmental standards for mining activity, limit permits to 10 years and make any company that violates the environmental standards ineligible for new permits until they reach compliance, establish a mine reclamation fund from royalty revenues and establish public participation guidelines, including inspection and enforcement of requirements plus the ability for citizens to sue if companies violate these rules. The measure would also change the outdated provision of selling federal land for $2.50 or $5.00 per acre. Congress has annually placed a moratorium on such sales for more than a decade.

Rahall has been trying to pass a new mining law since the 1980s and almost sealed the deal in 1994. Rahall is looking for a co-sponsor of similar legislation in the Senate. According to media reports, Senate Majority Leader **Government Update** continued on page 61

Remembrance

Herbert Driscoll "Dick" Teel

Herbert Driscoll "Dick" Teel: August 25, 1918–May 17, 2007. Dick was born and raised in Devine, Texas, which is located south of San Antonio. He attended St. Mary's University in San Antonio and graduated from the University of Texas at Austin with a BS in petroleum geology in 1939. Proration had just been put into effect in the oil industry and jobs as a geologist were scarce, so Dick worked for Standard of Texas (Chevron) as a surveyor on a gravity crew in West Texas. After a short stint, he then worked for Shell Oil Company as a surveyor in Mississippi, Louisiana and Texas. With World War II in Europe beginning and the capture of The Hague, Shell terminated all U.S. crews. Dick then worked for General Geophysical and later moved back to San Antonio, where he worked as a surveyor for the U.S. Corps of Engineers, which was building airfields for the war.

Dick took flying lessons and got his wings through the Civilian Pilot Training Program. Subsequently, he went to Lowery Field, Colorado, as a cadet and graduated as a 2nd lieutenant, specializing in aerial photography and photogrammetry. He spent four years in China with the 21st Photo Recon Squadron of the 14th Air Force, known as "The Flying Tigers," where he was Photo Lab Commander and Photogrammetry officer. He rose to the rank of captain and was awarded the Bronze Star for his service. Among many missions, the pilots of the 21st flew bomb spot for the atomic bomb drops at Hiroshima and Nagasaki. They also mapped the Philippine coasts for McArthur's invasion.

After the war Dick went to work for Stanolind Oil and Gas (now BP) as an oil scout. Later he worked as a geologist in various positions, rising to District Geologist for West Texas and Eastern New Mexico regions. His last 20 years at Amoco were spent in Exploration Computer Systems as a coordinator between the computer world and geologists, geophysicists and landmen. In 1986, at age 67 and being two years past the retirement limit, Dick left Amoco after 42 years of service. Dick quickly discovered that he did not like retirement and after two weeks went to work for Petroleum Information (now IHS Energy) as a geological consultant. His primary job was to specify the geologic horizons for each and every oil and gas well in the United States and Canada. The geologic horizons were coded to enable the industry to obtain computer searches by producing horizons. This was a first for the oil industry. Dick worked at IHS Energy for 20 years and greatly enjoyed working on geological projects there right up until February 2007. Donations can be made to the Memorial Fund of St. Thomas of Canterbury, 14007 South Freeway (Highway 288), Houston, TX 77047.

Remembrance

Charles L. Jones

Charles L. Jones, born July 30, 1931 in Lake Providence, Louisiana, passed away on May 19, 2007. Charles graduated from Baton Rouge High in 1948 and completed bachelor's and master's degrees in geology from LSU. After a distinguished career in petroleum exploration and management at Humble Oil and Exxon, he established the Charles L. Jones Endowed Professorship in Geology and Geophysics, and the Charles L. Jones Top 100 Scholarship at LSU. At the time of passing, he was employed as Vice President of Exploration at Taylor Energy Company LLC, where he also served on the board of directors. The family requests that memorial contributions be made to the American Heart Association.

Government Update continued from page 59

Harry Reid (D-NV) has expressed some willingness to work with Rahall on this legislation. In the past, the two have often locked horns on mining reform. Outside of Washington, DC, an atypical coalition of groups have bonded together to support the mining bill. The coalition includes Tiffany & Co, taxpayer groups, conservationists and sportsmen. In fact, Tiffany Chairman Michael Kowalski attended the press briefing with Rahall and Congressman Jim Costa (D-CA). Kowalski indicated that Tiffany buys most of its gold and silver from domestic suppliers and customers care about how their jewelry is made. Environmentalists also supported the legislation while the National Mining Association issued a cautious statement saying that it wanted to play a constructive role in developing fair and predictable mining policy.

The full text of the legislation is available from Thomas at http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.02262.

Water Bill Approved in Senate

The total cost of the Senate's Water Resources Development Act (WRDA, S.1248) was slashed in half, from $31.5 billion to $14 billion, in an attempt to protect the bill from Senators unhappy with the initial cost estimates. The slimmed-down bill easily passed on May 16, 2007, by a vote of 91 to 4.

The Committee on Environment and Public Works was able to cut over over $15 billion from the bill in part by reducing a provision that would have expedited hurricane related projects on the Gulf Coast by allowing the Army Corps of Engineers to construct projects to protect the region from a category five storm surge. Despite the cut, Louisiana in particular still stands to benefit from the bill, thanks to the authorization of almost $3.6 billion for projects in the state. Senators Mary Landrieu (D-LA) and David Vitter (R-LA) fought to keep some level of funding for Louisiana in the bill, considering the immense damage caused by Hurricanes Katrina and Rita. The bill also creates a National Levee Safety Program, improves flood protection for dozens of specific communities across the country, and improves dams and infrastructure over the length of the Mississippi River.

Committee Chair Barbara Boxer (D-CA) said the newest version is "a bill that meets everyone's needs." The House overwhelmingly passed a $13 billion WRDA bill in April (H.R. 1495); the two bills will now go to a bicameral conference. If passed, the amended WRDA would be the first change to the water resources infrastructure bill in seven years.

Full text of the Senate bill is available at http://thomas.loc.gov/cgi-bin/bdquery/z?d110:s.01248. Full text of the House bill is available at http://thomas.loc.gov/cgi-bin/bdquery/z?d110:h.r.01495.

Report on Climate Change Surveys: What Americans and Congress Think

On Friday, May, 4, 2007, the Environmental and Energy Study Institute (EESI) held a congressional briefing titled "Climate Change: What Americans Think" that featured a presentation by Dr. Jon A. Krosnick, the Frederic O. Glover Professor in Humanities and Social Sciences and professor of communication, political science and psychology at Stanford University. In addition to the briefing, EESI published the three-page fact sheet "Recent Polling on Public Perceptions of Climate Change: April 2006–2007." The fact sheet summarizes the findings of more than a dozen recent climate change surveys from such organizations as Gallup, the Washington Post and Yale University.

In the briefing, it was noted that on the issue of climate change, public opinion has been shifting very quickly. One-third of Americans now say global warming ranks as the world's single largest environmental problem, up from one-sixth just a year ago. The fact sheet also notes that 86% of Americans think that global warming "will be a serious problem if nothing is done to reduce it" and 76% believe that "the effects of global warming are apparent now."

The report also includes surveys of congressional members conducted by the National Journal. In that poll, 95% of Democrats believe that human activity is causing global warming while only 13% of Republicans would agree. The Republican numbers dropped by 10 points compared with a similar poll in 2006, indicating that congressional Republicans are moving in an opposite direction compared to the American public's perception on global warming.

The full text of the fact sheet as well as a video of the briefing is available online at www.eesi.org.

United Nations Releases Biofuels Report; Urges Caution

The United Nations Energy Consortium released a bioenergy report on May 7, 2007, warning that while biofuels could help rural economies and reduce global warming, these benefits might be outweighed by environmental problems and increases in food prices that will hurt the poor.

The report, compiled by UN Energy, a consortium of 20 UN agencies and programs, warned that increased production of biofuels could "make substantial demands on the world's land and water resources at a time when demand for both food and forest products is also rising rapidly." It also described the dangers of monocropping, saying it could "lead to significant biodiversity loss, soil erosion and nutrient leaching," and noted that biofuel production favors large-scale **Government Update** continued on page 62

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production, creating the possibility that small-scale farmers could be forced off their land by industrial agriculture.

With oil prices at record highs, biofuels have become an attractive energy source for poor countries, many of which already have agrarian economies. In addition to land, water and food supply concerns, the report cautioned that biofuels might not be as effective at combating global warming as has been advertised. Changes in the carbon content of soils and carbon stocks in forests and peat lands might offset some or all of the benefits of the greenhouse gas reductions, the report concluded.

The full text of the report can be found at esa.un.org/un-energy/pdf/susdev.Biofuels.FAO.pdf.

AAAS Statement Supporting Earth Observation

The American Association for the Advancement of Science (AAAS) Board of Directors released a statement on April 30 on "The Crisis in Earth Observation from Space." The report expressed concern that "the network of satellites upon which the United States and the world have relied for indispensable observations of Earth from space is in jeopardy" due to NASA and NOAA budget cuts and restructuring. It cited these satellites as "essential for weather forecasting, hurricane warning, management of agriculture and forestry, documenting and anticipating the impacts of global climate change, and much more."

The AAAS statement referenced a recent 400-page National Research Council study that also called for the restoration of NOAA and NASA satellites or else "major gaps in the continuity and quality of the data gathered about the Earth from space" will occur. The report also noted that as of 2005, 60 to 70 percent of space-based Earth observation data was from U.S. satellites and instruments, contributing significantly to U.S. preeminence in atmospheric, oceanic, and terrestrial Earth science. To maintain this scientific advantage, resources must continue to be devoted to Earth observation. The report suggested reinitiating specific key Earth observation capabilities that have been cut from NOAA satellites, accelerating NASA's current launch schedule, and ensuring funding to the 17 highest priority Earth observation missions for 2010–2020.

Full text of the statement is available at http://www.aaas.org/spp/cstc/docs/07_04_28board_eos_statement.pdf.

Encyclopedia of Life

The John D. and Catherine T. MacArthur Foundation and the Alfred P. Sloan Foundation have announced $12.5 million in funding to form the "Encyclopedia of Life," an online compendium of all of Earth's 1.8 million known species. The project represents a large collaboration between various Universities, Foundations, and Museums, including such leading institutions as Harvard University, Oxford University, the Field Museum of Natural History and the Smithsonian Institution. The website will be free and open to the public, and will include interactive descriptions of each species, including videos and links to entire genomes. The encyclopedia is expected to take ten years to complete, and will be available at http://www.eol.org.

Key *Federal Register* Notices

DOI—The MMS has issued a proposed final program and environmental impact statement (EIS) for 2007 to 2012. This is the third and final proposal for the new OCS oil and gas leasing program. The new program is scheduled to go into effect on July 1, 2007. The proposed final program and final EIS documents and information can be obtained online at http://www.mms.gov. [*Federal Register*: May 2, 2007 (Volume 72, Number 84)]

EPA—The Environmental Protection Agency has issued a final rule to extend the dates by which non-transportation-related facilities must prepare, amend, and implement an oil Spill Prevention, Control, and Countermeasure (SPCC) plan. This action allows the Agency time to propose and promulgate further revisions to the SPCC by extending the compliance date from October 31, 2007, to July 1, 2009. The rule is effective May 16, 2007. The EPA is also considering further amendments to address other areas where regulatory reform may be appropriate. For these additional areas, the EPA expects to issue a proposed rule later this year. Areas where regulatory reform may be appropriate include oil and natural gas exploration and production facilities, farms, and qualified facilities. [*Federal Register*: May 16, 2007 (Volume 72, Number 94)] ■

Application to Become a Member of the Houston Geological Society

Qualifications for Active Membership

1) Have a degree in geology or an allied geoscience from an accredited college or university; or
2) Have a degree in science or engineering from an accredited college or university and have been engaged in the professional study or practice of earth science for at least five (5) years.

Qualifications for Associate Membership (including students)

1) Be involved in the application of the earth or allied sciences.
2) Be a full-time student enrolled in geology or in the related sciences.

Annual Dues Expire Each June 30. (Late renewals – $5 re-instatement fee)

Annual dues are $24.00; full-time students and emeritus members pay $12.00.

Mail this application and payment to:

Houston Geological Society
14811 St. Mary's Lane, Suite 250 • Houston, TX 77079-2916
Telephone: 713-463-9476 Fax: 281-679-5504

Payment method:

☐ Check, ☐ VISA, ☐ MasterCard, ☐ American Express, ☐ Discover

Card # _____

Expiration Date: _____ Card I.D. _____

(Card I.D. – 3 or 4 digit number on front or back of card)

To the Executive Board: I hereby apply for ❑ Active or ❑ Associate membership in the Houston Geological Society and pledge to abide by its Constitution and Bylaws. ❑ Check here if a full-time student.

Name: _____
Address: _____

_____

Home Phone: _____ *Spouse's Name:* _____
Email: _____
Job Title: _____
Company: _____
Company Address: _____

_____

Work Phone: _____ *Fax Number:* _____
Circle Preferred Mailing Address: Home Office
Professional Affiliations:

❑ AAPG member No.: _____

Professional Interest:

❑ Environmental Geology
❑ International E&P
❑ North American E&P (other than Gulf Coast)
❑ Gulf Coast E&P (onshore & offshore)

School _____
Degree _____ *Major* _____ *Year* _____

School _____
Degree _____ *Major* _____ *Year* _____

School _____
Degree _____ *Major* _____ *Year* _____

Earth Science Work Experience _____

_____

_____

Applicant's Signature _____ *Date* _____

Endorsement by HGS member (not required if active AAPG member)

Name: _____

Signature _____ *Date* _____

Membership Chairman _____ *HGS Secretary* _____

rev. 3/13/2007

HGA

We are ready and eagerly beginning our new season. This will be an interesting, exciting and historical year for the Houston Geological Auxiliary. We are in the process of becoming "HPAC," which will combine auxiliaries of the Petroleum Engineers, Landman, Geophysicist and the long-standing Houston Geological Auxiliary.

We encourage new members who may join any time of the year. We have an exciting year ahead with numerous activities planned and are eager to work with the Houston Geological Society in any manner that we can be of assistance.

I wish to acknowledge the great job done by our past president, Sally Blackhall. We are also so proud of Eddie Bishop who received the "Distinguished Service Award" for her outstanding performances with HGS. Thanks Eddie for your dedication, modesty and charm.

Our first function will be September 11 at the Petroleum Club with lunch and entertainment. We look forward to seeing all our members there and welcome all guests; please call any member of the Auxiliary or Helen Hutchinson, our Vice President, if you wish to attend.

I am looking forward to serving as President this year.

Audrey Tompkins, *President*

HGA Officers, 2007-2008

President	Audrey Tompkins
President-elect	Sara Nan Grubb
1st Vice President	Helen Hutchinson
2nd Vice President	Sara Parr
3rd Vice President (SOS)	Daisy Wood
Secretary	Suzanne Howell
Historian Photographer	Donna Parrish
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Directors:
Sally Blackhall, Norma Jean Jones, Elinor Macmillian, Ruby Wagner

Representatives to HPAC:
Edie Bishop, Winona LaBrant Smith

Committee Chairs:

Courtesy	Mary Harle, Millioe Tonn
Electric Log	Naomi Watson
Year Book	Lois Matuszak
Notification	Elinor Macmillian
SOS	Daisy Wood, Edie Bishop

GeoWives

Hello, all:

As the newly elected president of GeoWives, I am looking forward to another year of good times and events that we will experience and to all the contributions that you, our members, will make. Well this is shaping up to a great year in the oil and gas industry and that simply makes everything more fun. After all our tribulations over the last 20 years, the ups and downs of the industry, we find it hard to be apologetic for finally having bettter times. We are planning some wonderful programs and will announce dates very soon. I hope you will join us.

Your President,
Sholeh Huber

As a HGA member you are invited to join

GeoWives

2006–2007 dues are $7.50

make check payable to *GeoWives* and mail to:

Sara Nan Grubb
11212 Memorial Drive • Houston, Texas 77024

Please provide the following

Name: _____

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_____

City/State/Zip: _____

Telephone: _____

email: _____

I will help plan a GeoWives activity ☐
I will serve on a committee ☐
Notification / Phone Committee ☐
Courtesy / Hostess ☐
My home is available for a meeting ☐

You are invited to become a member of

Houston Geological Auxiliary

2007–2008 dues are $20.00 • Due by July 15th 2007

Mail dues payment along wtih the completed yearbook information to **Audrey Tompkins**, 3007 Stally, Houston, TX 77092

YEARBOOK INFORMATION

Last Name	First Name	Name Tag
Spouse Name	Name Tag	HGS Members Company
Home Phone	Business Phone	Business Fax
Street Address	City	Zip
Email Address	Home Fax	

Please choose a Committee Assignment

☐ Fall Event ☐ Yearbook ☐ SOS ☐ Membership
☐ Christmas Event ☐ Spring Event ☐ Notification ☐ Game Day
☐ May Luncheon ☐ Courtesy

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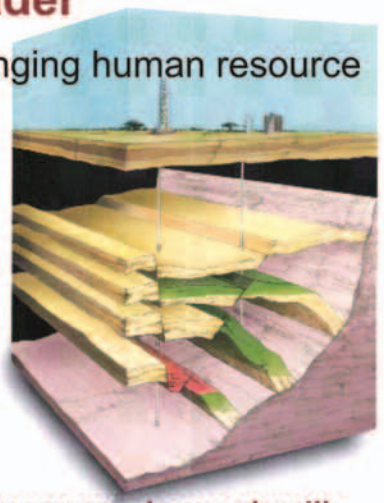

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13 - 14	**Quick Look Techniques from Prospect Evaluation to Reserves Estimates**	
	Houston	*2 day course, instructor Mr. J. Brewton*
17 - 21	**Principles of 3-D Seismic Interpretation**	
	Houston	*5 day course, instructor Dr. M. Thapar*
October, 2007		
8	**Geopressure & Pore Pressure Prediction Fundamentals**	
	Houston	*1 day course, instructor Dr. S. Shaker*
9 - 11	**Geopressure: Analysis, Application, Appraisal & Risk Assessment**	
	Houston	*3 day course, instructor Dr. S. Shaker*
8 - 12	**Principles of 3-D Seismic Interpretation**	
	Kuala Lumpur	*5 day course, instructor Dr. Mangat Thapar*
15	**Chimneys for Seal & Charge Risk Assessment**	
	Houston	*1 day course, instructor Mr. D.Connelly*
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 days course, instructor Dr. M. Thapar*

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